COUNTWAY LIBRARY
HC 3I4A L

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

Digitized by the Internet Archive
in 2015

https://archive.org/details/journaloftenness2319tenn

CENTENNIAL CELEBRATION, NASHVILLE, APRIL 8, 9, 10, 1930

THE JOURNAL
OF THE
TENNESSEE
State Medical Association

Owned, Published and Controlled by the Tennessee State Medical Association
ISSUED MONTHLY under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII
Number 1

JANUARY, 1930

Single Copy, 20 Cents
Per Year, $2.00

CONTENTS

SPASTIC COLITIS. Sam P. Bailey, M.D., Nashville 1
THE PROBLEM OF THE COLLOID GOITER. William Calvert Chaney, M.D., M.S. in Medicine, F.A.C.P., The Polytechnic, Memphis 8
PARA-NASAL SINUS DISEASE AN ETIOLOGICAL FACTOR IN MASTOID DISEASE. M. M. Cullom, M.D., Nashville 13
INDICATIONS FOR THE USE OF RADIATION IN DISEASES OF THE FEMALE PELVIS. W. S. Lawrence, M.D., Memphis, Department of Radiology, University of Tennessee 17
A STUDY OF 500 BREAST CASES WITH SURGICAL END RESULTS. W. O. Floyd, B.S., M.D., F.A.C.S., and W. D. Haggard, M.D., F.A.C.S, Nashville 24
EDITORIAL 30
NEWS NOTES AND COMMENTS 32
MEDICAL SOCIETY OFFICERS 33
ABSTRACTS OF CURRENT LITERATURE 34

THIS ASSOCIATION DOES NOT OFFICIALLY INDORSE OPINIONS PRESENTED IN DIFFERENT PAPERS PUBLISHED HEREIN

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN., UNDER THE ACT OF MARCH 3, 1879

The foundation of Calcreose is creosote—obtained from the wood of selected trees.

Compound Syrup of Calcreose

Available for the lesser ailments of the respiratory tract . . . a tasty, effective cough syrup that does not nauseate . . . each fluid ounce representing Calcreose Solution, 160 minims; Alcohol, 24 minims; Chloroform, approximately 3 minims; Wild Cherry Bark, 20 grains; Peppermint, Aromatics and Syrup q. s.

Tablets Calcreose four grains

Each Tablet Calcreose 4 grains, contains 2 grains pure creosote combined with hydrated calcium oxide. The full expectorant action of creosote is provided in a form which patients will tolerate.

THE MALTBIE CHEMICAL CO.
Newark, New Jersey

"I think that I shall never see . . . A poem lovely as a tree . . . Poems were made by fools like me . . . But only God can make a tree." —*Joyce Kilmer*

MALTBIE
Calcreose

MAIN BUILDING

HILL CREST SANITARIUM

FOR NERVOUS AND MENTAL DISEASES AND SELECTED CASES OF ADDICTION

Hill Crest Sanitarium is ideally located on the crest of Higdon Hill, on the proposed Scenic Highway overlooking the city. All modern conveniences. Separate building for convalescent women patients. Several acres of well-shaded lawn. Adequate nursing service maintained.

JAS. A. BECTON, M.D., Physician in Charge

Consultants:
B. L. Wyman, M.D.
H. S. Ward, M.D.
C. M. Rudulph, M.D.

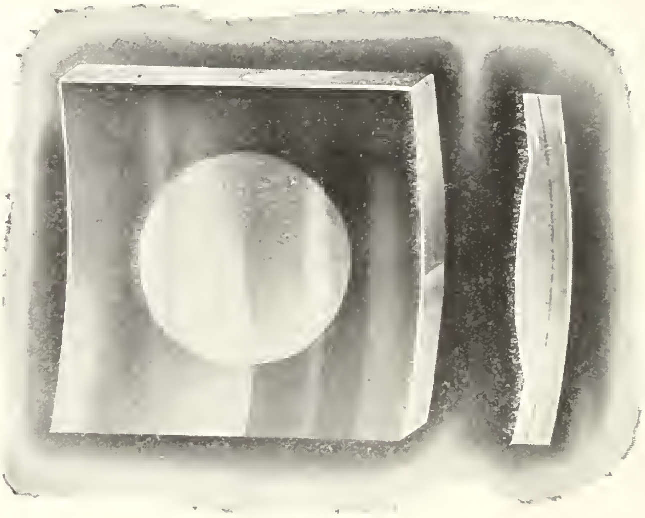
P. O. Box 96, Woodlawn, Birmingham, Ala.
Phone Woodlawn 1200

ULTEX CATARACT LENSES

Optically Effective for Post-Cataract Cases

. . . Users of Ultex Cataract Lenses are delighted with its optical efficiency, splendid appearance, and light weight. Optically, these lenses are a plus lenticular surface 28 mm. in diameter, ground on the occult side of 4.00, 6.00, and 8.00 base blanks.

. . . Because of being finished on a convex surface, the same as are Ultex One-Piece Bifocals, unnecessary weight is avoided, thus permitting the grinding of a lens that has the handsome appearance of an ordinary toric, yet its field is as large and effective as that in any other type of cataract lens. Ultex Cataract Lenses are a true scientific correction successfully used for post-cataract cases.



JOHN S. MILAM OPTICAL CO.

DOCTORS' BUILDING NASHVILLE, TENN.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII JANUARY, 1930 No. 1

SPASTIC COLITIS*

SAM P. BAILEY, M.D., Nashville

IN our present day civilization an artificial mode of living, undreamed of by our ancestors, has been developed. The interrelation of communities and nations, made possible by our modern means of transportation and communication, has necessitated and stimulated many advances in prophylactic medicine, particularly in the field of communicable diseases, neutritional diseases, infant and maternal welfare and others. In this life of today, when victory is more than ever to the swift, a great burden has been thrown on the nervous system of man. Functional nervous disorders have become one of the commonest conditions seen by the physician. Relatively little has been done to stem this advance. One wonders if the evolution of man's nervous system has been able to keep pace with the changes in his mode of living.

Among the common disorders arising in the person with a sensitive nervous system is a disturbance of the colon. The colon has begun to be recognized as the seat of various digestive ailments. It is exceptional to find a normally functioning colon among the cases of chronically disordered digestion. The frequency of spastic colitis in the general run of cases is impressive. There is a great incidence of it in the young, the middle aged and the otherwise normal individual. Recent clinical methods especially the x-ray have revised our knowledge of constipation, and have shown it to be due much more often to a spasm than to an atony of the colonic musculature.

An unstable nervous system seems to be the most important etiological factor in spastic colitis. Many of the individuals suffering with this complaint are born weaklings, and during the third and fourth decades, when the strain of life is the greatest, they break down. Careful history reveals that most of them suffer with some form of neurosis. Many are introspective. In others all life and happiness is bound up in the activity of their bowels and the condition of their stools. The severity of their symptoms varies directly with the nervous or emotional strain under which they are laboring.

Another thing that points strongly to the nervous system as the causative factor is the close relationship between spastic colitis and mucus colitis. Mucus is found in the stools in spastic colitis, and, during the acute attacks, it may be difficult to differentiate the two disorders. "Both of these conditions seem definitely due to a disturbance in the equilibrium of the sympathetic and para-sympathetic effort on the colon.

Constipation is an effect rather than a cause of spastic colitis. The spasm of the colon delays the fecal column; the condensor action of the mucosa removes the water from the feces; leaving hard, dry masses which irritate the bowel and increase the severity of the condition. Improper management of constipation is of great importance.

---

*Read before the Tennessee State Medical Association, Jackson, April 9, 10, 11, 1929.

Colonic abuse is the most important secondary causative factor. By colonic abuse is meant improper use of purgatives, enemas and diets. Very many of these patients are victims of the laxative habit. They have taken pills or salines daily until these measures have become ineffectual. The bowel finally becomes so irritated that the drug no longer has the desired effect. The same may be said of the enema habit. Several years ago the colonic irrigations were all the fad. In the larger cities institutes were developed to give these treatments and the popular periodicals carried their advertisements. "Fortunately a fad is a self-limited disease." Errors in diet may also start this condition. The habit of urging all constipated individuals to go on a diet high in roughage is unpardonable. Constipation associated with a disordered digestion is usually made worse by this means. Rough vegetables and raw fruits—cabbage, greens, bran, apples, etc.—will certainly precipitate spastic colitis in susceptible individuals. Certain protoplastic poisons—coffee, tea, alcoholic beverages and tobacco—may be among the guilty parties.

Spasticity of the colon may definitely be due to organic conditions reflexly affecting the colon. Among these are focal infections about the digestive tract, as gall bladder disease or appendicitis, or irritating lesions about the rectum, as hemorrhoids, fistula or fissure. Disease of the pelvic organs must also be considered.

Dr. Frank Smithies suggests that in many instances these people present something more fundamental than what is understood by the nervous or neurotic type. He has been impressed with the fact that in many instances he has to deal with a peculiar or individual diathesis—a spasmophilic diathesis. These individuals may from birth exhibit definite manifestations of this diathesis with faulty calcium metabolism, clinically manifest by an intermittent recurrent intestinal disturbance. The local bowel response seems to represent allergic responses which are excited by a number of agents, such as diatetic imbalance with regard to vitamines, varied forms of infection, nervous strain, accumulations in the bowels and enemas. The effect in these spasmophilic individuals of an explosion is an attack of colitis instead of the usual asthma.

Symptoms. The symptoms associated with spastic colitis are innumerable. They vary greatly with the individual. The patient is usually a woman with a history of constipation of long duration. A victim of the cathartic or enema habit. A sufferer from an indefinite abdominal discomfort. A great belcher.

The characteristic thing about the discomfort is its haphazardness in appearance; it may come on before breakfast; immediately after meals, or several hours later. The pain, or rather discomfort, is usually in the form of a mild griping or a dull aching sensation. It begins in the region of the umbilicus and radiates over the entire abdomen, especially the lower part. Occasionally it goes through to the lumbar or sacral region. There is great difficulty on the part of the patient in locating the point of maximum intensity.

The pain is occasionally severe griping in character. It may simulate organic disease—appendicitis, cholecystitis or ulcer. Eggleston noted the following in a review of one hundred cases. "Twenty-two per cent had been subjected to appendectomy with little or no improvement, and in many instances the nervous and abdominal symptoms were more severe following surgery. Five per cent had submitted to cholecystectomy with no improvement." . . . "Many of the women submitted to pelvic operations—dilation and curattage, shorting of the round ligaments—for the relief of dysmenorrhea complicating spastic colitis, with but little relief."

Associated with the discomfort is a sense of fullness and a rumbling noise in the abdomen. The fullness is usually in the lower abdomen, and its time of appearance is in no way related to the ingestion of food. The patient is distressed by the excess gas.

She may develop aerophagia. Practically all have tried to get relief from bicarbonate of soda before reaching the physician's office. This may give some relief from the discomfort, both pain and distention, but only after belching has occurred.

All of these patients are chronically constipated. And in various attempts at its relief most of them have exaggerated their symptoms. Many have found out that certain articles in the diet make them worse, particularly apples, pears, cabbage and leafy vegetables. Laxatives have been used over periods of years with bad effect. Enemas, high and low, medicated and plain, have been used with only slight relief of symptoms. The patient may note that the pain of which they complain is reproduced in an exaggerated form when an enema is attempted. Finally the colon will retain the fluid for only a few seconds or it will not return at all.

When the patient has been placed under a great mental or emotional strain or some form of colonic abuse—purge, enema, food—the ever-present constipation is replaced by a diarrhea with griping pain and several large mushy stools a day.

The mushy stool is very characteristic of this condition. The first part of the action may be formed and the last part loose, watery and mixed with mucus. When constipation is obstinate, hard lumps resembling goat dung may be passed with difficulty. These lumps may be covered with mucus. The mucus is usually mixed with the stool in spastic colitis and not in strings and casts as in mucus colitis.

The general symptoms of which these sufferers complain are innumerable. Many are called hypochondriacs. They awake after a restless night or one of unrefreshing sleep with a dull headache and a bad taste in their mouth. They have no appetite. They feel that many foods will disagree with them and they are afraid to eat. They have mental lethargy and are introspective. They tire easily. They have lost weight and strength. When the history of a gastro-intestinal case is too long or too involved one must always suspect a functional disorder.

Physical Findings. One impressive feature is that the degree of physical discomfort is as a rule out of proportion to the physical findings and the organic changes in these cases of spastic colitis. Examination often reveals the patient to be a slender individual with a sallow complexion and a tendency to complain. The blood pressure is usually low. The surface of the abdomen may be marred by one or more linear scars—the remainder of several attacks by surgeons. The abdomen is usually distended and tympanic, particularly the lower part. The abdomen is not rigid and is slightly tender throughout. The tenderness is more marked over the descending colon which may be felt as a firm, slender tube. Proctoscopic examination is negative in the uncomplicated case. The stools are usually mushy in character, mixed with mucus and strongly acid in reaction. The odor is sour and penetrating. At other times the stool may be composed of hard lumps. During the periods of acute irritation the temperature may be above normal. At this time the white blood count may rise to 10,000 to 12,000.

A diagnosis can practically always be made from an x-ray examination. Many observers prefer the oral administration of the barium. In the cases with hypermotility, the head of the barium column is in the rectum in nine hours and a stool containing barium may have been passed. When a persistent spasm is present, the column may be retarded at a point in the colon over fifty hours. There is a marked irregularity in the size, shape and spacing of the saculations of the colon. In other instances there is an almost complete loss of saculations producing a ragged and twisted fecal column. The barium enema may produce colicky pain or reproduce the type of abdominal discomfort complained of by the patient. The colon fills rapidly and empties rapidly, or the enema will only go in a short distance and return without filling the colon.

A diagnosis may be made from the following points:

1. Persistent constipation;
2. Colicky pain in the abdomen, mild in degree, the point of maximum intensity can not be located;
3. Sense of fullness and belching;
4. Bicarbonate of soda gives relief but only after belching has occurred;
5. The history of colonic abuse;
6. Mushy stools mixed with mucus or hard, lumpy stools;
7. The characteristic abdominal discomfort may be reproduced by an enema;
8. A tender contracted descending colon may be palpated in the left iliac region;
9. X-ray reveals a characteristic colonic deformity.

One should be extremely careful in diagnosing any of the human ills as being purely functional in nature. This is particularly true of the digestive tract. In the older individuals all the symptoms outlined may be found in cancer of the stomach or bowel. Other things must be considered—gall bladder disease, peptic ulcer, appendicitis, intestinal parasites, chronic ulcerated colitis, lesions about the rectum and even diseases of the pelvic organs.

Treatment. The treatment of spastic colitis presents a problem which in many cases is difficult of solution. The case is a chronic one; the constipation of long duration; the constipation and the discomfort has not been relieved by alkalies, laxatives, enemas or high residue diet; the mental state is depressed; the etiological factor is a faulty nervous system. The ultimate aim of all treatment is to give the sufferer's colon an opportunity to resume its normal function.

The first step is to exclude the presence of organic disease of any kind. Should this be present, it should be corrected if possible before turning attention directly to the colon. In the purely functional case in the underpar individual, rest in bed away from family and friend is the treatment of choice. Since this condition is fundamentally of nervous origin, psycotherapy must not be neglected; the patient must be removed from fears and worries as far as possible. Above all do not tell the patient that the trouble is only with his nerves and that he is a neurotic.

Diet is a very important factor in the cause and in the relief of this condition. All rough foods or foods with a large amount of residue aggravate this condition and may precipitate one of the acute exacerbations with severe colicky pain and diarrhea. At first when there is much pain and tenderness, a very low roughage diet is advised. Start out with a diet of milk, eggs, cereals—cooked or prepared, oatmeal should be strained and bran cereals avoided—bread from white flour, soft vegetables that have been forced through a colander, strained orange or grapefruit juice, chicken, fish and ground beef. These foods contain little roughage and do not tend to irritate the colon. Care must be taken to avoid stimulants as pepper, spice, coffee and alcoholic beverages. Gradually other foods of a more bulky nature may be added to the above list. In arranging a diet be sure that the total quantity is sufficient because many of these people are already undernourished. The excessive gas which the patient has attributed to certain foods is usually relieved when the stasis has been corrected.

Drugs may be of definite aid in spastic colitis. Antispasmodic and sedatives have a place. Tincture of belladonna will help relieve the spasm. In the cases with sleeplessness and depression the sedatives of the barbital group rather than the bromides will often give the necessary mental and physical rest.

Occasionally it is necessary to resort to certain mild laxatives when treatment is first instituted; these are usually discontinued after a short time. Mineral oil or agar agar are best fitted for this purpose.

There has been a great deal of controversy over the use of enemas. An enema of one pint of warm tap water is often necessary at first. In the very *obstinate* cases oil enemas are a great aid. Six to eight ounces of cotton seed oil are warmed to a little above body temperature. This is slowly injected into the rectum with the patient in the knee chest position and allowed to remain over night. The use of hot colonic irrigations is definitely injurious.

Other measures as baths, diathermy, massage, dilation of the sigmoid have been advised.

During an acute attack with colicky pain with or without a diarrhea, the following treatment has been used. Stop all forms of colonic abuse. Put the patient to bed. Apply heat to the abdomen particularly to over the descending colon. Give tincture of belladonna in doses of fifteen drops every four hours. Give luminal grains one and one-half if needed for rest. A low residue diet is essential.

In the chronic cases with constipation, gassy indigestion and abdominal discomfort, the use of mineral oil at night and a small enema in the morning will be necessary at first. Later these measures may be discarded. In the more obstinate cases oil enemas may be resorted to.

Permanent cure of this condition can rarely be hoped for. Relief for long periods has often been obtained.

1. Functional disorders of the nervous system are on the increase.

2. An unstable nervous system is the most important etiological factor in spastic colitis.

3. Colonic abuse may bring on this condition in susceptible persons.

4. Important therapeutic measures are rest, low residue diet and antispasmodics.

5. Recurrences are the rule.

DISCUSSION

DR. B. S. RHEA, Lebanon: Mr. President and Gentlemen:

Dr. Bailey has very beautifully, splendidly, dignified and magnified a symptom of a neurotic condition, until it is made to appear as a distinct entity. In my opinion the symptom belongs really in the neurotic group, other than this, I can think of no condition, in which, I have seen it in my general practice except in the constipated pellagrin.

Dr. Bailey mentioned in the treatment of nervousness, sleeplessness, the sedatives of the barbital group. I have failed to get good results from these. I much prefer the bromides.

I do not feel capable of discussing this splendid paper, owing to my lack of experience in these neurotic conditions, as I live in rather a remote district where we haven't become so terribly over civilized, as they are in Nashville, Dr. Bailey's home town. Should I find patients of this type I shall refer them to Dr. Bailey, as I am satisfied he knows his colons.

DR. O. N. BRYAN, Nashville: Dr. Bailey has brought a very important subject before us. I believe he is claiming that the foundation of this functional nervous disorder is probably right, and the type of case that is thrown under some great strain over a long period of time will play a part in this. No doubt, heredity also plays some part. He has correctly gone into a lot of contributory factors that have effect. He has gone rather fully into the symptomatology, making it fit any case that you might have. If you will take those symptoms and his x-ray picture, I think you will make the diagnosis of spastic colitis.

Under the treatment, he said the main thing, one of the chief factors, was psycho-therapy. In this I heartily agree with him. I must say it is not every time you go to see a patient that you will be able to apply psycho-therapy, as it should be to that patient. In other words, you have to be more or less in tune with that patient and have yourself in good shape, in order to meet such a case.

Before we enter into any arguments about the treatment of such cases, we must make the most complete physical examination in order to assure this patient that we are right when we begin treatment. Then they can not get around our arguments. When we do that and are sure of our ground, I have found that you can put most propositions up to the patients in the way of treatment and they are ready to submit to it. Fifty per cent are ready to submit to any operative procedure. However, operative procedures are not going to cure these cases, medicine is not; we have to change the diet as outlined by Dr. Bailey, get them on systemic exercises and then by the use of some of the sedatives, as were outlined, we can help these cases, plus the belladonna, or, personally, I use antrophine. In using antrophine, of course, I think it is correct to use this up to the point where they are feeling the effect.

Now, as to the luminal, use that a little differently. I believe half grain doses, three times daily, are better than one and one-half grain doses once a day.

DR. CARROL C. TURNER, Memphis: I would like to ask Dr. Bailey if he could give us some statistical data as to the number of cases of spastic colitis showing endocrine disturbances, as are familiar with this condition in vagotonia, and its counterpart in sympatheticatonia. So many of these cases are relegated to the ash heap of medicine-neurasthenia, and others are often associated with functional disturbances. Would it not be of interest as well as a matter of benefit to our patients to assume that there is an endocrine basis in all of these cases and to make the attack of our clinical investigation along that line in order to at least exclude this possibility?

DR. J. A. McINTOSH, Memphis: Dr. Bailey referred to the surgical procedures that have been practiced on the patients with spastic colitis, and it is to this phase that I would address my remarks.

It has been our experience with surgically removed material especially appendices with clinical diagnosis of chronic appendicitis to find frequently what we consider anatomical evidence of allergy.

We have repeatedly examined appendices called acute appendicitis and were surprised to find in them animal parasites, flagellates, amebae, worms, etc.

Just yesterday we examined four appendices and in two of them we found the ordinary seat worms. We compiled the data on one hundred appendices surgically removed as to the contents and change in the walls and it led us to this conclusion: That there does exist abdominal distress which generally the doctor does not distinguish between abdominal allergy and inflammation.

Spastic colitis suggests inflammation by the ending of "itis." Yet in some instances at least it doesn't exactly fit non-inflammatory clinical pictures. Is spastic colitis comparable to asthma as a disease entity? At least a dose of adrenalin might aid in distinguishing clinically between inflammation and allergic recation where there are symptoms of pain referable to the colon.

I believe this disease could be studied profitably in the light of allergy.

DR. HALEY, Nashville: Mr. Chairman, I believe the paper brought to us by Dr. Bailey is probably one of the most timely papers we could have.

I fully agree as to the number of patients, after surgery has been performed, complaining of abdominal pain. Naturally neurotics are the patients mostly coming to us with these aggravated symptoms, and if we are led to believe the reports x-rays give, all have spastic colons. I can't recall I have gotten a report from an x-ray laboratory that hasn't brought with it one of spastic colon. What has caused this spastic colon to exist is hard to say. The patient may have been extremely nervous at the time the x-ray picture was made and nervous previous to that time. Roughage they consumed with the belief that they were going to get relief from chronic constipation, eating large amounts of bran, and their condition is worse the more roughage they eat. Whether these are the causes or whether these are the results, I can't say, but we do know that they come to us with a loaded bowel, packed colon, dry condition of feces, with very foul-smelling stools.

These patients have gone to doctors to get morphine for the relief of their spacticity and abdominal pain. My preference has been instead of giving them luminal, push atropine to the point of full therapeutic effect; it is very much better and very much more lasting.

Tincture of hyoscyamus given in twenty drop doses three times a day, and seven and one-half grains salol midway between meals will many times relieve these cases of fermentation. I believe that most of these cases are caused by the material staying in the colon a great length of time. With enemas and antiseptics, we can keep the colon clear of the material that is irritating it.

It is a question, I think, that requires quite a great deal of study. I can't say that we internists are glad to get these cases back from the surgeon. I think the Legislature already has too much to do in the State to pass a law of this kind and the surgeons would fight it. They wouldn't consent to keep these patients and treat them.

As to the question that the gentleman asked Dr. Bailey regarding endocrine glands (I believe he asked Dr. Bailey, but I will make a suggestion), there isn't a doubt but what the endocrine chain of glands has a great deal to do with the control of the colon.

DR. T. H. PHILLIPS, Rockwood: I merely want to say that from the impression of the gentleman who preceded me, wants to leave the idea that spastic colitis is a disease of the neuro. The word "neuro" is like a headache. What is a neuro? The truth of the business is that spastic colitis may be your cause of your neuro. Because you can't find the pathology in the gastro-intestinal tract or the gall bladder, there is no reason it isn't there.

It has been proven it is a fact that a great many patients may be born with an unstable nervous system, maybe, more susceptible to conditions like spastic colitis, but let that be as it may, spastic colitis may be the cause of your neurosis.

Protein poisoning, I believe, is one of the great factors in the production of spastic colitis. For instance, he mentioned the giving of milk. My experience is, that you will find in spastic colitis that sweet milk and eggs are foods, that the majority of these cases will produce your attacks of spasm. Purgatives of any kind are bad in colitis, and we are bound to select, if it is necessary, some of the milder purgatives, such as mineral oil and cascara.

Now, in regard to luminal, if you are going to give one or other of the barbital perparations, giving them occasionally, that might be all right, but if you give luminal over a long period of time, in my opinion, is detrimental and dangerous. Those of us who have paid any special attention to the effects of luminal or some of the other barbital group know that we get a relaxation of all the muscular structure and it is a bad thing to use. To get occasional relief, that would be all right, but give it routinely, I think luminal or any one of the barbital acid preparations is a bad thing. Belladonna or atropine, with large doses, and in some cases bromides, have given better results, and the remedies that are the best. I certainly would not give any of my folks, if I had one in my family or anybody close to me, very much of the barbital preparation. That is, I mean giving it to him routinely, but just occasionally that is probably all right.

DR. JNO. L. JELKS, Memphis: Some very interesting things have been brought out here in the discussions, and I feel constrained to say a few things about so called spastic colitis. In the first place, let's get our nomenclature right. There isn't any such thing as spastic colitis. There isn't any such thing as mucous colitis. We called to task one of our greatest teachers in America on this subject. We told him, for God's sake don't do that again.

Colitis—what is it? Spastic colitis? No. Colitis, yes. What kind of colitis, find out? Use your microscope and use your common sense, your senses along with your microscope and you may find out something.

Look upstairs, if you please, and see if you don't find in many of these cases streptococcic infection. Look into that gut and see if you cannot find a highly congested, inflamed mucous membrane, find out what is there. If you have streptococci upstairs, why can't you say, "streptococcic colitis." Of course you have spasms. Many spasms are brought about by an allergic state. Eating an egg causes spasm in some people because they have an allergic condition. Please, gentlemen, let's get our nomenclature correct.

DR. BAILEY (closing): I want to thank you all for your liberal discussion. How many were in Washington in 1927, and heard Dr. Alverez read his paper on "Nervous Indigestion"? I think he read a masterpiece, never to be duplicated.

In defense of the term spastic colitis, it has in its favor brevity and usage. It is the symptom complex described under the name of disorderly colon, nervous indigestion, anxiety, neurosis, or twenty other names, but it is only a term to cover the symptom complex.

Dr. Jelks always speaks of flagalates. I was disappointed that Dr. Jelks didn't speak of flagatales as an etiological factor in spastic colitis.

The question of bromides, I like barbital preparations. I don't like bromide preparations. Dr. Alverez prefer bromural.

Regarding the allergic reaction referred to by Dr. McIntosh, Dr. Smythes is one among a number who referred to spastic colitis as being the result of an allergic reaction. In certain instances, the acute attack rather than the chronic, it may be due to an allergic reaction.

Dr. Turner, I can't answer your question. I am not qualified to speak on endocrine disturbances. I think that is all. Thank you.

SEND IN YOUR APPLICATION FOR SPACE IN THE

Physicians' and Surgeons' Directory

See Editorial page in September issue for information.

THE PROBLEM OF THE COLLOID GOITER*

WILLIAM CALVERT CHANEY, M.D., M.S. in Medicine; F.A.C.P., The Polyclinic, Memphis

TECHNICALLY speaking, any enlargement of the thyroid gland to the degree where it is definitely palpable, is a goiter. The term "colloid goiter" will be used in this paper to refer to those glands that are diffusely enlarged as a result of an excess of colloid throughout the whole or greater part of the gland. Terms such as "endemic," "adolescent," "simple," etc., are confusing because they are used to refer to two types of goiter: the diffuse colloid and the adenomatous, or to a combination of the two.

According to Plummer, diseases of the thyroid gland may be classified as follows:

1. Diffuse colloid goiter
2. Adenomatous goiter without hyperthyroidism
3. Adenomatous goiter with hyperthyroidism
4. Exophthalmic goiter
5. Myxedema
6. Cretinism
7. Myxedema of childhood
8. Thyroiditis
9. Malignant diseases of the thyroid.

In glancing over this classification it is seen at once that a goiter belongs in one of the first four groups. We are naturally more interested in the exophthalmic goiter and the toxic adenoma because they produce more or less clear-cut symptoms and the treatment of them by surgery gives dramatic and beneficial results. In this age of preventive medicine, however, when we should strive to look ahead and keep the patient out of trouble, we should be most interested in the colloid goiter. According to the work of Marine and Kimball, it has been rather conclusively shown that the proper medical treatment of colloid goiter will, to a very large degree, cut down the incidence of hyperthyroidism in the future.

In those parts of the United States where colloid goiters occur with great frequency as in the regions around the Great Lakes, the medical profession has become intensely interested in the subject, but in this part of the South, colloid goiters are much less frequently seen and as a result there has been a tendency on the part of the profession to give very little thought to them. According to Kimball there is no endemic goiter in the lower Mississippi Valley, while sixty-four per cent of the school children in the Lake Superior districts were goitrous in 1924. The relative infrequency of the colloid goiter in this section of the country can, in all probability, be explained by the fact that actual chemical analyses of water

	COLLOID GOITER Non-Vascular 75% Vascular 25%	NEURASTHENIA	EXOPHTHALMIC GOITER
1. Age	Average 14 (1-24)	Any age	Average 28 (1-75)
2. Nervousness	0	+	+
3. WEIGHT LOSS	0	0	+
4. APPETITE	Normal	Poor	+
5. HEAT CHANGES	0	Too cold	Too warm
6. Course	Regular	Regular	Irregular
7. Palpitation	0	+	+ —
8. Nervous system	0	Depression	Stimulation
9. Appearance	Normal	Fatigue	Alert
10. Exophthalmos and stare	0	0	(60—80%)
11. Thyroid gland	Symmetrical—Soft	Normal or enlarged	Symmetrical—Granular
12. Tremor	0	+	+
13. Finger nails	Normal	Normal	Abnormal
14. QUADRICEPS WEAKNESS	0	0	+
15. Pulse rate	Normal	+	+
16. PULSE PRESSURE	Normal	Normal	+
17. BRUITS & THRILLS	Non-Vascular 0 Vascular +	0	+
18. BASAL METABOLISM	10 to — 20	30 to — 20	10 and above

---

*Read before the Tennessee State Medical Association, Jackson, April 10, 1929.

in the lower Mississippi Valley have shown an iodine content from 10,000 to 18,000 times the amount contained in water in the Lake Superior districts.

This high iodine content of the water explains many of the variations in goiters of the lower Mississippi Valley as compared to the same goiters in other parts of the country. Some of the observations I have made on the changes in the various types of goiter noted in this section of the country may be summarized as follows:

(1) In most cases of exophthalmic goiter the lobes and isthmus of the gland are very firm in marked contrast to the same type of goiter in other regions where the gland is comparatively soft and granular. For a number of years many observers have called attention to the fact that when iodine is given to a patient who has an exophthalmic goiter the gland becomes smaller and decidedly hard.

(2) In preparing a patient with exophthalmic goiter for surgery, the beneficial results of Lugol's solution is less dramatic, as a rule, in this section of the country than in other parts where the soft granular gland is found more frequently.

(3) Plumer has said, in discussing colloid goiter, that twenty-five per cent of them are of the vascular type with bruits and thrills. When an iodine preparation or desiccated thyroid is given in the treatment of this type of colloid goiter the bruits quickly disappear. I have not yet had a large enough series of colloid goiters from this vicinity to give definite percentages, but I am sure that the vascular colloid goiter occurs much less frequently than twenty-five or even ten per cent.

(4) In the use of iodine in the treatment of colloid goiters, if the lobes of the thyroid become definitely firm, the chances are that the patient has an exophthalmic goiter and not a simple colloid goiter.

It is highly important that we give serious thought to colloid goiters and that every effort be made to diagnose them accurately, for:

1. They are frequently mistaken for exophthalmic goiters and operated upon.

2. They can be cured by medical management.

3. They should be treated to avoid a more serious type of goiter later.

4. When an adenomatous goiter has associated with it a large amount of colloid, it is often mistaken for a diffuse colloid goiter and treated with iodine. Such treatment *may* cause the development of hyperthyroidism.

It is not easy to differentiate between some colloid goiters and some of those of the exophthalmic type. For example, the patient may have a mild exophthalmic goiter and come to the physician during a period of remission when the basal metabolism rate is below normal instead of being above. Again, the patient may have a vascular colloid goiter with bruits and thrils over the superior thyroid vessels and have also a neurasthenic make-up with nervousness, tremor, rapid pulse and even a pseudo-exophthalmos. It is generally conceded by most writers that more mistakes are made in diagnosing a toxic goiter when it does not exist than are made in overlooking the presence of hyperthyroidism.

While it is true that many of these cases of colloid goiter are mistaken for exophthalmic goiter and operated upon, it is a mistake that is not justifiable. An attempt will be made to differentiate clearly a colloid from an exophthalmic goiter, assuming that we are dealing with borderline cases that have many of the symptoms commonly ascribed to each type. A carefully taken clinical record is highly important and may even decide the diagnosis for us in many cases.

The patient with an exophthalmic goiter will give a history of a loss of weight in spite of an increase in appetite. This increase in appetite and loss of weight is found in only two conditions: hyperthyroidism and diabetes mellitus. The patient with a colloid goiter is not hyperthyroid, has not lost weight, and has a normal appetite. The exophthalmic goiter patient feels too warm all of the time while the neurasthenic individual is too cold and the patient with the colloid goiter is normal. Great care should be taken to determine the course of the illness, for an exophthalmic goiter always runs in waves with periods of exacerbation and remission.

In differentiating the neurasthenic patient with a colloid goiter from the patient with an exophthalmic goiter, the appearance of the patient as he enters your office and his sitting posture is of great help. The exophthalmic goiter patient looks excited and overly warm as if he had run to your office. He sits erect and is alert to everything going on around him. The neurotic type of individual, on the other hand, appears fatigued and depressed and slouches in his chair as if he could not hold himself together. It is nearly always possible to demonstrate weakness of the quadriceps muscles in cases of hyperthyroidism by having the patient step upon the step of the examining table, while the "neuro" shows no weakness, but complains of being too tired to make the attempt. Hyperthyroidism invariably produces an increase in the pulse pressure while the patient with a colloid goiter will be normal.

A careful examination of the finger-nails oftentimes is helpful in deciding the presence of hyperthyroidism. It is most frequently noticed in a patient with exophthalmic goiter that the nails are turned upward slightly at the ends and the nail bed is quite irregular at the tips of the fingers.

The subject of basal metabolism determination was purposely mentioned last because this apparatus must be used to verify the diagnosis and not to make it. It must be remembered that the neurotic patient may be nervous, have a rapid pulse, present a tremor and produce a metabolism rate decidedly above normal. Two or even three basal metabolism determinations should be made in these doubtful cases in order to get a true basal reading.

The statement has been made that when an adenomatous goiter has associated with it a large amount of colloid, it is often mistaken for a diffuse colloid goiter and treated with iodine. Such treatment *may* cause hyperthyroidism. Authorities on this subject differ as to whether iodine ever does cause adenomatous goiters to hyperfunction, but until this question is settled certainly it is safer to withhold iodine from them. The failure to find adenomata within a gland that contains much colloid is usually due to faulty methods in palpating. Both hands should be used and the thumb should be held in front of the sterno-mastoid muscles while the other fingers should press firmly behind it. In this manner both lobes of the gland can be carefully palpated for nodules if the patient is made to swallow several times. These adenomata are most likely to be found in a soft and diffusely enlarged gland after the twenty-fifth year.

The treatment of the colloid goiter is essentially the use of some form of iodine in the smaller glands and carefully regulated doses of desiccated thyroid in the larger ones. In school children Kimball preferred the use of 0.01 gm. of iodine in organic combination given once a week. His preparation was made up in a chocolate tablet (Iodostarine—Roche). Of course Lugol's solution or syrup of ferric iodide may be given just as well. If the goiter is quite large and rather unsightly, desiccated thyroid tablets should be prescribed with care, keeping the patient under observation to avoid the production of a marked hyperthyroidism. Two grains per day of desiccated thyroid is practically always a large enough dose—and is to be preferred to larger doses although the results are not nearly so dramatic. After one to three weeks the dose usually should be reduced to one grain per day.

Conclusion. Colloid goiters should be diagnosed accurately for:

1. They can be cured by medical management.

2. They are frequently mistaken for exophthalmic goiter and operated upon.

3. They should be treated to avoid a more serious type of goiter later.

4. When an adenomatous goiter has associated with it a large amount of colloid, it is often mistaken for a simple colloid goiter and treated with iodine. Such treat-

ment may cause the development of hyperthyroidism.

BIBLIOGRAPHY

1. Elliott, Chas. A.; Hyperthyroidism. Trans. Interstate Post. Grad. Med. Assn. October, 1927.

2. Kimball, O. P.; The Efficiency and Safety of the Prevention of Goiter. A. M. A. Journal, Vol. 91, No. 7, P. 454.

3. McCarrison, R.; The Thyroid Gland in Health and Disease. 1917.

4. Marine, D.; The Importance of Our Knowledge of Thyroid Physiology in the Control of Thyroid Diseases. Arch. Int. Med., Chicago, 1923, XXXII, P. 811-827.

5. Plummer, H. S.; Oxford Medicine, Vol. III, Part II, P. 851.

DISCUSSION

DR. N. S. SHOFNER, Nashville: Mr. Chairman and Gentlemen: Dr. Chaney has given us an extremely interesting paper on the subject of colloid goiter, and I particularly admire his clear-cut differentiation between the simple colloid goiters and cases that he calls exophthalmic goiter.

I must beg leave to differ when he quotes Dr. Plummer as authority as his classification has been seriously questioned, and recently additional proof of the fallacy has been brought forth by Reinhoff of Johns Hopkins, particularly in regard to the question of adenoma. Reinhoff has proven that whether the patient be a case of hyperthyroidism or normal individual or hypothyroidism so-called adenoma is simply a process of involution, a hyper-involution associated with periods of enlargements, which may be either physiological or pathological, leaving in this way, this area of localized enlargements, which at first appearance seems to be a true tumor, but is not a true tumor but merely a localized area of hyper-involution. There are cases of true tumors of thyroid glands. They occur, however, in only about ten per cent of the nodular goiters.

There has been also no clear-cut and definite proof of the separate classification of the so-called toxic adenoma and exophthalmic goiter. In my opinion, which is not original with me, but based on good authority, as well as my own slight experience, they are one and the same disease.

There are individual variations in the contour of the glands and certain variations in the patients as to the palpable enlargements. One of the chief points in upholding that view, I think, is the response to iodine. It has been said that the so-called exophthalmic goiter will respond favorably to iodine, but that toxic adenoma will not. That is not literally true, they both respond favorably to iodine, and in the pre-operative management both should be given doses of iodine.

There is a question in my mind as to the advisability of treating simple goiters or colloid goiters, whether they may be of the smooth variety or nodular type, medically, except in adolescence. I think that Lenhart, and Kimball more recently, did prove that iodine is very efficacious in adolescence, in the prevention of goiter, but in the adult, after the goiter has fully developed, I think it is dubious whether those patients are ever cured by iodine. I make no differentiation there between the nodular and the smooth variety. That is merely a description term and the process is merely one there also of hyper-involution.

I feel that the administration of thyroid extract in the treatment of any goiter, except in those in which hypo-thyroidism is present is an extremely dangerous procedure. Even in my brief experience, I have seen a number of cases that have been definitely stimulated to hyper-thydroidism by the administration of thyroid extract, and I don't believe that often the size of gland is of any great consequence, except where surgical means are necessary for relief of pressure.

There are three definite indications for surgery in the simple goiter. First, enlargements producing pressure, particularly; second, in cases in which the patient desires for cosmetic reasons to have the goiter removed, and third, in cases where nodules are enlarging. (Applause.)

DR. W. D. HAGGARD, Nashville: I was very much interested in the paper, and particularly that part with reference to the simplest variety of colloid goiter that has been referred to as the goiter of "adolescent."

We look upon the goiter in the young, as well as the later life, due largely to a deficiency, and as a consequence, with a little iodine there is in a person who develops goiter has been worked over and over again. There are only ten milligrams handled by the thyroid anyhow, and as a consequence, as soon as you supply iodine to the school girl or boy, then it rapidly disappears. As a matter of fact, it often disappears without treatment. The goiters of adolescent may disappear with treatment and without treatment. The simplest way is the syrup of ferric iodide. One or two doses, that is something every one could use with great ease.

Speaking broadly, it has been estimated if we would put one-thousandths of one per cent iodine in our salt that we would have a universal disappearance of goiter. Salt, like flour, is milled too much that the iodine is taken out, the very thing we really need it for. We eat too much salt, anyhow.

The simplest way to palpate a goiter is to use both hands, the thumb should be held in front of the sternomastoid muscles, and letting the patient swallow, you can palpate with great ease.

DR. W. S. THAYER, Baltimore: Dr. Haggard spoke a moment ago about the frequently puzzling instances which present only the cardiac manifestations. I think this is an important point. Recently, I saw an interesting case referred to me by Dr. Dean Lewis. He was man of, perhaps, fifty, business man with attacks of paroxysmal auricular fibrillation. There was moderate hypertension and a trace of albumin in the urine. His basal metabolism was a little higher than normal, ten or twelve per cent, both in Chicago and with us. There was a moderate cardiac enlargement. I suggested his giving up work for several months and taking a period of rest with massage and gradual physical retraining. Under observation he became somewhat tremulous, and his basal metabolism rose to forty-two above normal, although he was in bed. After ten days of iodine, operation revealed a small thyroid, with characteristic adenomata. He has made a perfect recovery so far as we can see.

Then, I should like to say one more word. As Dr. Chaney said, of course, nowadays with the help that we have in methods of estimating basal metabolism, those rare instances of what appear to be simple goiter which develop into hypothyroidism, are recognized earlier.

I remember one remarkable instance which I saw over twenty years ago. The woman who was in her late forties, I had known for sometime. She had a rather remarkable pale, doughy complexion which had struck me as I met her socially. I was called to Washington one day to see her, and, to my great surprise, I found this picture. She had come back from the Maritime Provinces with distressing constipation which had to be relieved manually—after this there was a little blood in the urine. Later the urine was increased in quantity, showed a little albumin, and a very low specific gravity. She was dull, slightly delirous. The heart was not enlarged; the pressure, low. For the moment it looked as if she had an acute nephritis. It was before the days of basal metabolism tests. On my way back to Baltimore, suddenly I put two and two together; she had had a goitre for years; it had been growing smaller; the picture was characteristic of myxedema. Nothing could have been more striking. Under thyroid treatment, she recovered entirely and lived for many years.

DR. W. C. CHANEY, (closing): I should like to express my very great appreciation for the discussion of this paper. The question of classification of goiter is a big one. As. Dr. Haggard has said, Plummer's classification is a very practical one, and serves our purpose very well.

The case referred to by Dr. Thayer is very interesting. Patients who have hypothyroid conditions and even those that are true cases of myxoedema are oftentimes very difficult to diagnose.

Order Blank for Space in Professional Directory

To Tennessee State Medical Association,
510 Doctors' Building, Nashville, Tennessee.

Name -- M.D.

Specialty --

Office address --

City --

Bill me $4.50 quarterly for one-tenth page inserted twelve times.

The Directory will be classified under the proper general heading when sufficient number of spaces under each heading have been taken.

PARA-NASAL SINUS DISEASE AN ETIOLOGICAL FACTOR IN MASTOID DISEASE*

M. M. CULLOM, M.D., Nashville

FOLLOWING the epidemic of influenza in 1918, we had to deal with many infections of the para-nasal sinuses and with many cases of mastoid abscess. In the routine examination of the sinuses, I began to notice the association of purulent disease of the sinuses with mastoid abscess. About 1920, I began to make routine examination of the sinuses in all cases of mastoid abscess and have followed it up since. I was surprised to find the regularity with which the examination would disclose infection of the sinuses. Going back over all my mastoid cases, I find that about eighty-five per cent show an infection in some one or all of the sinuses. Another point is, that I have never found a mastoid involvement in connection with a sinus infection where there was not sinus infection on the same side with the mastoid. It is my routine practice now when I have a mastoid x-rayed to have an x-ray made of the sinuses also, and it is rare that such a picture does not disclose an infected sinus.

An examination of a number of standard works on the ear gives a great number of causes listed as etiologic factors in purulent infection of the middle ear. In only one was any mention made of purulent disease in the nose as a cause. There might have been vague statements which might be construed remotely to refer to this condition as a possibility. Phillips refers specifically to chronic infection of the accessory sinuses as a cause of purulent otitis-media. Why he should exclude an acute infection of the accessory sinuses, he does not say. His allusion to the accessory sinuses is almost at the end of a long list of possible causes so it would appear that sinus disease had not impressed him as a frequent cause.

Among the causes listed by most authors, the greatest prominence is given to specific infections in the exanthematous diseases, scarlet fever, measles, diphtheria, epidemic influenza, etc. Carious teeth are given as a frequent cause which I consider as far-fetched. Adenoids and tonsils are given as a frequent cause. We do know that adenoids do aggravate an existing purulent infection of the middle ear and that removal will facilitate the cure of the condition but I am convinced that diseased tonsils have received a lot of blame for this condition that is undeserved. Tonsils are responsible for enough ills without giving them unnecessary censure. Swimming pools and douching the nose are justly given as causes. Infections by way of the vascular and lymphatic system are given prominence as causes. I believe they cut very little figure in purulent infection of the middle ear.

My observations in my mastoid cases covering a period of nine years as well as a great many cases of middle ear abscess that did not eventuate in mastoid abscess convinces me that purulent disease of the accessory sinuses is by far the greatest cause of purulent infection of the middle ear. I am further convinced that purulent infection of the middle ear is by direct continuity and is not blood borne.

In the case of infectious diseases, I believe that those cases attended by middle ear abscess would show a very large percentage of existing purulent infection in some one of the accessory sinuses, if properly examined. The swimming pool and douche cases of middle ear abscess are strictly analogous to infection from infected sinuses. Purulent material from the patient's own nose is washed into the eustachion tube or else water infected with virulent bacteria gains entrance through the nose.

In conclusion I feel that the chapter on etiology of purulent infection of the middle ear will have to be rewritten. I also have the feeling that the fact of purulent infection in the para-nasal sinuses plays so large a part in purulent infection of the middle ear would support the theory that lung abscess is also the result of infection by direct continuity and not blood borne. A further evidence is the fact that lung abscess occurs as a rule in the same situation as lung abscess caused by inspiration of foreign bodies. I also believe that it furnishes strong grounds to believe that many cases of pneumonia and bronchitis are the result of infection by direct continuity from an infected para-nasal sinus. In the five mastoid cases operated on during the last month, three had infection in the para-nasal sinuses, one followed purulent infection of the middle ear begining last September, so that there is no way to rule out sinus infection, at that time, one apparently had no sinus involvement.

---

*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Jackson, April 8, 1929.

Dr. H. S. Shoulders who made the x-ray pictures has kindly consented to show the pictures and discuss the paper. While in the mood to theorize, I wonder if it could be possible that infection in the gall bladder could be caused by continuity. We know of course, that patients with purulent infection of the para-nasal sinuses swallow enormous amounts of pus. We know that the virulent germs found therein would have to run the gauntlet of the gastric juices and it may be that they would be rendered inocuous by the time they reached the gall duct. I have two patients now who have purulent disease of the accessory sinuses who have developed acute infection of the gall bladder. This of course, is entirely outside of the field of the ear, nose and throat surgeon but it would be interesting if all cases of gall bladder infection could have their sinuses examined. To my mind no single factor in disease is so little appreciated as sinus infection and I believe that observation and study will reveal it as a cause of many conditions that are not understood at present.

DISCUSSION

DR. W. G. KENNON, Nashville: I must confess that I have not paid any particular attention to sinus infection in mastoid disease. I have my mind centered on the mastoid condition and forget the patient might have some disease elsewhere, but looking at it from the anatomical standpoint, we must consider the mastoid as being a slightly removed accessory nasal sinus. The mastoid, situated at a distance from the nose, the naso-pharynx and its structure, in most cases, is very similar to that of the accessory sinuses, so when we get a middle ear infection, we have just an additional sinusitis, we might say. You have these patients come in with middle ear infection and you find they have a sinusitis, but is it a coincidental infection, an infection that occurs from the same cause, at the same time, or has the sinusitis anything to do in an etiological way with the development of the mastoiditis, is a question I cannot answer.

I am rather inclined to think that the same infection causing the sinusitis at the same time affects the mastoid.

DR. STEWART LAWWILL, Chattanooga: I would like to agree with Dr. Kennon, that these infections of the sinuses are coincidental, rather than etiological.

During this last "flu" epidemic, I have had more middle ear infections than at any previous time, I believe. Any number of those have been associated with sinus infection. There is no history of previous sinus infections in those cases, and I can not see why it wouldn't be a coincidental infection in both the sinus and the mastoid at the same time, an infection that came on at the same time. If they had no infection in the ear previous, why couldn't you believe that they didn't in the sinus?

I have had two or three cases of acute otitis with tenderness over the mastoid and this tenderness did not clear up until the sinuses were cleared up, particularly the maxillary, and when the sinus infection was cleared up the mastoid got better. The drainage evidently became better through the eustachion tube, and the mastoid improved.

I believe they are coincidental.

DR. W. L. SIMPSON, Memphis: It seems to me that Dr. Cullom has evidently decided a very important factor and something we should have known a long time ago.

I feel that any time we have a middle ear infection, we had a para-nasal infection, and practically every time you have a para-nasal infection you have a sinus trouble, and in the bad sinus conditions the infection just simply travels on back to the ear.

For instance, if one has an acute sinusitis today, if he is careful about blowing his nose, no matter how much sinus trouble he has, he will probably not have mastoiditis for three days or a week from now, but unless he is careful in blowing his nose, he will have.

There isn't such a thing hardly, it seems to me, as an eustachion tube infection. That would be hardly possible anatomically.

As to the mastoid not getting well while the separated condition and the sinusitis is still going on at a rapid rate, that is normal, think that should be the course, sinus is not treated, if all full of pus, nose stopped up on the side on which the mastoid is located, naturally you are going to have trouble with that ear, longer or more extensively than if the nose opened up and get the sinus properly treated.

I believe in almost any serious or rather severe case of rhinitis that both sides are infected, and it is pretty hard for me to think that the mastoid infection only occurs on the side on which the sinus trouble is located with the x-ray. There is such a short distance that I believe the mastoid would be infected on the other side practically the same number of times, unless the side on which the mastoid is located has a badly obstructed nose, and naturally then if the pathology is a good deal worse on that side, you are going to have mastoiditis on that side, rather than on the other, but if the sinus is the same on the two sides, naturally you are going to have mastoiditis on both sides.

I am glad Dr. Cullom brought this subject before us, have been working on it several years, and I believe he is absolutely right in everything he brought out. It is perfectly logical to think that that is so, and it is correct anatomically and otherwise.

DR. JERE CALDWELL, Nashville: I wish to agree with Dr. Kennon in that the mastoid abscess is rather coincidental with sinus disease.

Here is a thing we have all overlooked: How many sinuses do we see that have no mastoid trouble? We all know that due to our present mode of living and ventilation we have a great deal of sinus infection. So in that respect, I couldn't lay a great deal of stress on the fact that the sinus infection is the direct cause or the etiological cause of mastoid infection.

Dr. Kennon brought out a point I never thought of before, and that is, a mastoid could be considered sort of an accessory to the sinus, as there is a direct connection there.

There is another thing that Dr. Cullom rather slighted, I think, the fact of adenoids and tonsils as being the cause of middle ear trouble, not so much mastoid abscesses, as middle ear trouble, and it is a point, I think, we ought to give a great deal of thought to.

I enjoyed the paper and like all of us, if we listen to a paper, we can always learn something.

DR. HERRON, Jackson: I wish to thank the Doctor for this well-written paper.

We all think of the ultimate, end results in doing our operations, and I want to ask the Doctor in what percentage of cases, or if he knows what percentage of cases he has to drain the sinus, following the mastoid operations. It has been my experience, after draining the mastoid and after the cure, I have no trouble with the sinuses. Of course, some cases go on to an untimely death, and it may be in those cases we have overlooked the fact that they could have empyema of the sinus as complicating the mastoid.

I want to say in the future I am going to give more attention to the para-nasal sinus in doing mastoid work. It has been my experience in the past that all mastoid cases that I have operated on have gone to a cure without any nasal work having been done.

DR. EARL GOYER, Jackson: I would just like to agree with Dr. Cullom on that proposition, the small number of cases that I have seen, it seems to me in practically all of the cases I happened to find a sinus involvement.

Now, it is possible that it just happened so with me, because I don't see a great many of them, but that has been my experience in practically all the cases, where my x-ray showed a mastoid infection, I also was able to find a sinus infection at the same time.

DR. R. L. WITHERINGTON, Lebanon: In my limited experience in this work, I believe the cases of mastoid disease, real mastoiditis and mastoid symptoms that I have had, at least fifty per cent that showed para-nasal sinusitis, and for that reason, I am bound to agree with Dr. Cullom on his idea as to these sinus infections.

Now, I think I am safe in saying that in fifty per cent of the cases of mastoid disease that I have seen, either one or both of the sinuses have been infected.

During the past epidemic, I will cite one illustration, not a mastoid, to lead up to the thought I have that agrees with Dr. Cullom. I was called to see a patient, who was in a good deal of pain and misery, and upon local treatment to the nose he obtained relief, and I necessarily advised that he have a septal spur removed. He, of course, after his relief, didn't accept the advice, and went on until this past Saturday, he had another little acute indisposition and came in complaining with severe stoppage of the ears, and as you know, all these catarrhal drippings, as the essayist says about continuity, seeping back to the tubes, will cause this condition. The ears were as if they were "under a bushel," couldn't hear, and upon applying the remedy to the opening or outlet, and then carrying the medicated air through the tubes to the ears, "Oh," he said, "that is perfectly all right. I can hear better." So I am bound to agree with Dr. Cullom as to the etiology of our mastoiditis cases, and, of course, secondary mastoid.

DR. CULLOM (closing): I want to thank you gentlemen for your full and free discussion of this subject. I want to thank Dr. Kennon, too, for that observation that the mastoid can be looked upon as one of the accessory sinuses of the nose. I think that is good. I had never thought of it in that light before.

Now, as to this infection in the middle ear being a coincidence of the infection of the sinus. I have seen quite a number of cases during the period that I have been interested in this matter, whom I knew had infection of the sinuses, who would come in with an infection in the middle ear. Some of them had had sinus infections for years and would turn up with infection in the middle ear that would go on to a mastoid.

Now, I didn't say that you couldn't have an infection in the ear from an infected sinus on the other side. All I said was that I have never found a mastoid case that also had a sinus infection that didn't have an infection on the same side as the mastoid.

In this list of cases, I have had a great many where the infection was confined to one side, and the mastoid was always on that side. Of course, I had a great many cases of double infection of the antrum, where there was only one mastoid, and, of course, a great number of infections in the sinuses that did not infect the middle ear, but the mechanics of it is so simple and so obvious that I am bound to believe it is the etiological factor in a great majority of cases. The pus drains back into the post-nasal space over the mouth of the eustachion tube on that side and the conclusion seems obvious that it is the etiological cause.

I am very glad indeed, to be able to present this subject to you for one reason, and, that is, that I want you all to investigate your mastoid cases. I would like to see a very wide investigation of this subject and see if we can't put it on a firm basis.

I would also like to see the working out of this theory, whether or not lung abscess, pneumonia and bronchitis, are the result of an infection by continuity from infected sinuses. I think that it is a very, very important subject. If it can be established that infected sinuses may result in mastoid abscess, lung abscess, bronchitis and pneumonia, it will constitute a further imperative indication for the opening and draining of infected sinuses.

We already know that infected sinuses are the cause of a great deal of ill health and if we can further show that they constitute a grave menace to the ears and the lungs and through them to life itself we will do a great work for humanity. I would very much like to see this investigation carried out upon a large scale.

DR. JERE CALDWELL, Nashville: What effect do you feel that the radical treatment of a sinus had on your already established mastoid?

DR. CULLOM: I meant to speak of that. I have had a certain number of cases, not large, where I have drained the sinus after I have done the mastoid.

In two of my recent cases I drained the antrum and whether it was a coincidence or not, my assistant told me that previous to the draining of the cases there had been quite a profuse drainage from the mastoid and the day after I drained them the discharge ceased. One couldn't draw much of a conclusion from two cases but the fact that the drainage ceased after the antra were opened I thought was significant. A good many of the cases I didn't drain because they were acute cases and cleared up without operation. But in chronic cases I think they should be given the benefit of thorough drainage as a protection. The little I have seen of cases drained afterward the mastoid seemed to be definitely benefited.

INDICATIONS FOR THE USE OF RADIATION IN DISEASES OF THE FEMALE PELVIS*

W. S. Lawrence, M.D., Memphis
Department of Radiology, University of Tennessee

THE diseases and conditions considered in this paper fall into two classes: First, those diseases in which radiation is positively known to be of great value, undisputed proof existing in abundance, and second, certain other conditions in which results have not been so positively demonstrated, but about which we are continually receiving evidence more and more nearly convincing. These two divisions of the subject might be spoken of as "proven" and "unproven" territory.

Under the first classification will be considered cancer of the cervix, excessive hemorrhage near the menopause, fibroid tumors past the age of thirty-eight, menorrhagia and metrorrhagia in young women, and hypertrophy at the cervix with diseased cervical glands. Under the second classification will be considered three closely allied conditions: namely, infantile uterus, amenorrhea and sterility.

Carcinoma of the Cervix. So much has been written upon this subject, that I will simply state briefly my own rather positive conclusions: 1. This disease should be treated by radium and x-rays only—never operated. 2. There is crying need for standardization of the x-ray and radium treatment of this disease. 3. All of these cases should have *both* x-ray and radium. 4. Early cases should have radium first, but this should be followed within ten days by a thorough and not half-hearted course of high voltage x-ray therapy. 5. Borderline cases should have x-rays first, and this should be followed within ten days by radium. 6. Advanced cases receive by far the greatest amount of good from x-rays, but radium should be used as a supplement. 7. Treated along these lines most early and borderline cases may be cured, and in the future the total salvage of all cases will likely exceed fifty per cent.

Excessive Hemorrhage Near the Menopause. In the Journal of the Canadian Medical Association for April, 1925, G. E. Richards, Chief of Department of Radiology, Toronto General Hospital, reports one hundred and forty-eight cases treated by x-rays without a single failure. In remarking on this series of cases the author says: "Many articles have been written on this subject during the past ten years, and yet there seem to be those who doubt the value of this procedure or at least regard it as being still in the experimental stage. The fact cannot be too strongly stated that there is probably no therapeutic procedure which is so certain in its effects and so satisfactory in the vast majority of cases as the use of radiation in this type of disturbed mentrual function." I cannot better sum up the situation than in the above words, written in 1925.

These results may be obtained by either x-rays or radium rays. In my judgment, however, the x-ray method is by far the method of choice—and this for the following reasons: It is a far less unpleasant experience for the patient, there is no "exposure" which appeals to every patient, there is never need for an anaesthetic, the whole dose is not given at once and can be so divided as to obviate the danger of extreme nausea or prostration, there is no hospitalization, there is no danger of lighting up old pelvic disease.

Uncomplicated Fibroids Past the Age of Thirty-eight. These cases should be treated by radiation and not surgically. Reasons: 1. Complete or nearly complete disappearance of the tumor along with all symptoms will result in practically every case treated adequately with high voltage x-rays. 2.

---

*Read before the Tennessee State Medical Association, Jackson, April 9, 1929.

There is no primary or secondary mortality resulting from this treatment. 3. There is no hospitalization and no loss of time from ordinary occupation. 4. There is no anaesthetic with its attendant dangers. 5. There is no painful and tedious convalescence.

In the American Journal of Surgery for November, 1927, Frank W. Lynch of the Department of Gynecology, University of California, says in an article on Submucous Fibroids and Their Treatment: "There are two methods of treatment, surgery and radiation. On account of excessive loss of blood surgery must be deferred in many cases. These should be given deep x-ray therapy, which will control the hemorrhage in ninety per cent of the cases. Seventy-five per cent will show a reduction in the size of the tumor. The twenty-five per cent that show no reduction in the size are left in good condition for surgery." He further states that there is no evidence that radiation ever produces complete disappearance of the tumor. With this last statement I very heartily disagree. Five years ago I treated successfully by deep x-ray therapy a fibroid about the size of a five months' pregnancy. Three years later I witnessed a laparotomy on this patient. The uterus appeared perfectly normal, and was so pronounced by the operating surgeon. In nearly every case of fibroids that I have treated the uterus has apparently returned to normal, but this is the only one that I have known to come to operation and actual visible inspection.

G. E. Richards of Toronto reports treating a series of eighty-six selected cases with disappearance of the tumor in every case.

Small fibroids may be controlled by either x-rays or radium. Large ones, in both theory and practice do far better with Roentgen therapy. In my judgment Roentgen therapy is the method of choice in all of these cases—fibroids past the age of thirty-eight.

For the past ten or twelve years I have treated a few cases of fibroids each year, for the most part successfully. Since 1924 I have treated thirty cases. All were successful except two. These two were far advanced, enormous tumors, marked acites and oedema of legs from pressure—they should likely not have been accepted for treatment.

Menorrhagia and Metrorrhagia in Girls and Young Women. Here, indeed, is a fertile field for radiation therapy. A field in which the greatest good may be accomplished, a field in which all other measures fail far oftener than they succeed, a field in which failure means gloom and despondency for the patient, and success the greatest of all happiness.

These cases are difficult, exceedingly difficult, but many of them can be treated successfully.

The root of the trouble is distorted ovarian function. Small doses of radiation stimulate the ovaries and in most cases would add to the severity of the symptoms. Large doses will abolish ovarian function and produce amenorrhea—as bad or worse. Medium doses should accomplish the desired result; but what are medium doses? Many, many factors enter into the answer to this question.

For obvious reasons Roentgen therapy is far more appropriate than radium in most of these cases.

A case report will illustrate what can be done for many of these patients. A young married woman of twenty had always flowed too long. No children. For the past year had often menstruated for two or three weeks each month. Very anemic, and unable to do her house work. Despondent, and felt that she was a burden to her husband.

A dose was selected which produced amenorrhea of four months duration. This brought return to health and strength. Normal menstruation was later established. This, however, was interrupted by conception and in due time a normal, healthy boy arrived. This cycle has been repeated within the past year.

Hypertrophy of the Cervix with Diseased Cervical Glands. There are three methods of attack in this disease—surgery, electro-coagulation, and radiation. Of the three surgery is the oldest—and should be allowed to die in peace, electro-coagulation in the youngest and quickest method—much may be said in its favor, while radiation is the *best* method and gives results which leave very little to be desired.

The source of radiation to be used here is unquestionably radium and not the Roentgen tube. Radium can be placed in the center of the diseased structure and spends its full force on the tissue adjacent to it. Less than a half castration dose will usually shrink the cervix to its normal size and rid it of diseased glands which have been keeping up a sticky discharge that local remedies would not touch.

Newer Fields. Turning now to newer fields where the results of radiation therapy are nothing like so well established, we find our interest centered chiefly on three rather closely allied conditions: namely, infantile uterus, amenorrhea, and sterility.

Having always been a conservative, I have little personal experience here to report. I believe, however, that this work is of sufficient promise to warrant my calling your attention to the claims that others are making, and also to note that the x-ray treatment of these conditions is based not altogether on over-enthusiasm and radicalism, but to a considerable extent on sound reasoning.

Professor Paul Werner, University of Vienna, Austria, has a paper in the January 1927, number of the American Journal of Obstetrics and Gynecology on the Roentgen Ray Treatment of Benign Gynecologic Disease. This article is devoted almost entirely to the conditions under consideration. Dr. Werner states that while trying to regulate with small doses of x-rays the mentrual flow in young women suffering from menorrhagia he found that such doses do not weaken or destroy the function of the ovaries, but actually stimulate these organs. Acting upon this discovery he succeeds in restoring menstruation in cases of amenorrhea, and then actually observed pregnancy in patients in whom sterility seemingly was due to ovarian hypo-function. Thus encouraged, he writes, we treated young amenorrheic women in large numbers, and by careful observation noted that ovarian stimulation by means of the x-ray not only caused menstruation to become more regular and more nearly normal in amount but that in many instances it would lead to pregnancies ending in full term labors.

Later, Werner, following Hofbour's lead, began irradiating the pituitary body in cases of dysmenorrhea and amenorrhea and met with, he says, some surprisingly good results.

I might remark that this method has been advocated in the treatment of hyper-thyroidism and with results which, at least, justify further study. The justification for this procedure rests upon the theory held by some endocrinologists that the pituitary gland is the "King Pin" of the ductless gland system.

As radical as these ideas may seem they are by no means confined to their fountain head, Vienna, the city of "Black Oxen" fame, but have "found favor in the sight" of not a few Americans.

Many of you heard the recent paper of Dr. Barton Cook Hirst, of Philadelphia, on Studies in Sterility read before the Tri-State Medical Association, February 7, 1929, and published in the Memphis Medical Journal for March, 1929. A part of this paper has to do with stimulating ovarian activity by small doses of radiation. Dr. Hirst states that "We have in the stimulating dose of x-rays to the ovary and the pituitary an agent apparently of great efficiency in increasing the secretory power of these glands."

Dr. I. Seth Hirch, author and radiologist, of New York, has done no little work along these lines and has reported favorable results.

I have done some work of this kind but am not ready at this time to express an opinion based upon personal experience.

DR. R. A. BARR, Nashville: Dr. Lawrence suggested in his paper that of the three methods of attack on certain pelvic diseases the oldest, surgery, should be allowed to die in peace. He further said that he believed in strict conservatism, and if he is conservative, surgery will have to die. If he left the surgeon anything he failed to mention it.

It is natural for radiologists and surgeons to approach this subject from differefnt points of view and it will take co-operation and co-observation between them over a long period of time for us to finally get a real balance of judgment.

To take up cancer of the uterus first I may say that I have been somewhat more liberal in my attitude toward radium than most surgeons. I can even concede the propriety of using radium and x-rays in cancer of the body of that organ, and in case of cancer of the cervix, however early, my choice would always be for this combination in preference to surgery, unless there was some associated inflammatory disease of the adnexa. In this latter case radium would be dangerous, and in early cancer my preference (with such complications) would be for surgery followed by x-ray. In late cases we must probably take the risk from radium.

Menorrhagia is not sufficiently accurate as a diagnosis, and treatment should never be instituted without every effort to locate the cause of the bleeding. Even in cases in which malignancy and other new growth of the uterus can apparently be excluded (I may say that I have no faith in so-called biopsy by curettage) we still have displacements, and associated disease of the tubes and ovaries. Ovarian cancer (and it is not rare) double cholocate cysts of the ovaries and ordinary specific salpyngitis all make the use of rays useless and the latter makes the use of radium dangerous. Prolapse of a large chronically inflamed uterus, marked retrodeviation of a heavy boggy uterus, especially when either of these is associated with a badly lacerated cervix, make conditions in which I consider surgery safer and more satisfactory in every way than the use of rays.

As to fibroid tumors of the uterus the difficulty (not to say impossibility) of exact diagnosis and particularly of diagnosis of all possible complications makes me prefer surgery. Dr. Lawrence says that in nearly every case of uterine fibroids that he has treated the uterus has returned to practically normal. This is contrary to the experience of the big clinics where the gynecologists and radiologists have treated and observed patients together. In the experience of the Mayo Clinic, in the work of Clark and Norris, for instance, many fibroids fail to be reduced by radium and rays, in many cases the cervical discharge is increased, and there is an increased incidence in the development of cancer in later life.

Rays are dangerous. I have lost one patient from deep x-ray therapy at the hands of a specialist. I have personally lost two patients with cancer of the cervix from old pelvic infection lighted up again from the use of radium. Deep therapy over the pelvis produces ten times as much nausea and discomfort as the average hysterectomy patient complains of.

From many angles the surgeon still has an avenue of approach and there are many objections to radium and rays besides their failure to cure. It certainly takes the best gyneclologist to use radium in pelvic disease with even reasonable safety and satisfaction.

DR. DUNBAR NEWELL, Chattanooga: A good many things that Dr. Lawrence said I agree with and some I don't agree with at all.

I don't think that the treatment that he advises for hypertrophy of the cervix is correct at all. I think that the proper treatment for hypertrophy of the cervix is a cautery and not radium. My experience with use of radium has not been favorable.

I haven't had any experience with the treatment of sterilty in the young woman and infantile uterus. I do not know what effect radium or radiation has on those cases.

Dr. Lawrence says the most important thing in connection with the use of radium and radiation with x-ray was the technique.

That technique should be correctly done. I think the technique of the use of radium is a very important factor, and think one should only use radium and x-ray after they have perfected a technique and be very careful. If not, a great deal of harm can be done.

In the treatment of hemorrhages around the menopause, the most important thing is to thoroughly and carefully and completely as possible make the diagnosis. To use radium in a case not properly diagnosed, I think is a very dangerous treatment because you may overlook something that is very, very important and you may do the patient a great deal of harm. I think the cases should be put to sleep with a general anesthetic. If you are dealing with cases of hypertrophy endometritis, radium has a wonderful effect.

In the treatment of fibroid, here, again, I think it is very essential that we diagnose the type of fibroid we are treating. If we are dealing with subserous fibroids, I think it is absurd to use anything but surgery, if the patient can be gotten in condition to be operated on. If the tumor is not larger than an orange, I think radium and x-ray may be a very satisfactory treatment.

In the treatment of submucous fibroid, I don't think radium or x-ray should be used, except as an emergency. To say that a patient can be treated with deep x-ray therapy or radium without any pain at the time of the treatment is very true, but, personally, in my experience and I have treated many cases, my patients who have radium and deep x-ray therapy suffer more from the reaction during several months by far than they from a hysterectomy.

A few years ago I was using more radium than now and the reason I quit using it in cases of fibroid tumors was because of the continual cry of the patients of the reactions they have which lasts so many months and that reaction is a real reaction, and if the patient is inclined to be a little bit nervous, the reaction is terrible.

I do not think that any extremely nervous patient should ever receive a large dose of radium, if surgery can be selected instead.

When we come to cancer of the cervix, I do agree with Dr. Barr. Personally, I never expect to use radium on cases of cancer of the body of the uterus. On cancer of the cervix, I think the treatment is radium and deep x-ray therapy.

Now, we have been using radium in these cases for fourteen years, and we have been driven to this definite and positive conclusion: We have more cures and and far less mortality by the use of radium and deep x-ray therapy than we did formerly with hysterectomy. We have many cases living today after ten or twelve years that came to us on a cot, some of the most severe types of cervix cancer, with frozen pelvis. Many of these cases are apparently well today. The operable cases, of course, we have many more, and I am quite sure that our mortality in the cases of cancer of the cervix in early stages is far lower than in years past. We have today from twenty-five to thirty-five per cent of those cases, living more than five years.

DR. CRUTCHFIELD, Nashville: I want to thank Dr. Lawrence for bringing up this subject. Dr. Lawrence presented it from the x-ray standpoint, Dr. Barr from the surgery standpoint. Dr. Newell has used it in both from a radium standpoint and surgical standpoint, and I think that the conservative plan of treatment is the best. In other words, over-enthusiasm in either direction is wrong, and that each case should be taken as an individual and the treatment which is best adapted to that individual case should be given.

I would like to second what Dr. Newell said with regard to the radiation in surgical treatment. I have been using radium for thirteen years and have treated more than five hundred cases of tumors of the uterus, both cancers and fibroids, and at first I was more enthusiastic about radiation and radium than I am at the present time.

Now, a year ago, I reported two hundred and twenty-five cases of fibroid tumors of the uterus that had been treated with radium. Out of that two hundred and twenty-five cases, the mortality only one, which is much less than if you would treat all the cases by hysterectomy. If these cases had all been treated with hysterectomy, twenty-five per cent required transfusion, the mortality would have been very high. I think there is a middle-ground.

I disagree with Doctor using radiation in the case of a woman over twenty. The most pitiful sight in the world is to see a young girl about to get married who feels she is—

DR. LAWRENCE: Thirty years, I said, not twenty.

DR. CRUTCHFIELD: I think in any case less than thirty-five years of age radiation should be proposed very cautiously. At least, in child-bearing age, and especially if they are single.

With regard to radiation treatment of fibroid, we found that only fifty per cent of the tumors reduced in size. Dr. Barr, I have seen at least four or five tumors about the size of a three and one-half or four months' pregnancy as down practically to normal. Three of the cases we treated with radium came to operation. Two of them were because of a cancer phobia, and one was in a physician's wife. They were relieved of objective symptoms. Hysterectomy was done more to ease the mind of the patient and her husband, and in both of these cases the uteri were perfectly normal, one recent case that had a persistent pain, some three or four years after radiation treatment. The uterus was found in operation to be perfectly normal and the pain was due to a small fibroid in the broad ligament. Now, the patient had histerectomy and was relieved of her pain. That patient had a tumor of the uterus about the size of a five months' pregnancy. In young women, hysterectomy is preferable. After the child-bearing age in which the only symptom is hemorrhage, why I think radiation should be used cautiously until we have ruled out malignancy and that is by careful examination and if the blood is coming from the uterus.

I have seen a number of patients who have had as many as five or six x-ray treatments without having had a diagnostic cure at all. Recently, we operated on a patient who had had repeated x-ray treatments, without benefit, and upon operation, found she had a cancer.

With regard to fundus of the uterus, I think that it should be used cautiously because the fundus of the uterus very often destroys the normal mucular tower of the uterus.

DR. W. S. ANDERSON, Memphis: I will just take up where Dr. Crutchfield left off in regard to cancers of the fundus, which, to my mind, should be treated strictly surgical. We do know that cancers of the fundus frequently metastasize to the ovaries and tubes, and unless the whole uterus is removed together with both ovaries and tubes, we will get a recurrence.

Carcinoma of the cervix: The pendulum has swung backwards and forwards, to operate or not to operate, to use radium or not, but now the consensus of opinion in cancers of the cervix is to confine your work to the use of radium and x-ray, as has been brought out by Dr. Lawrence. I co-operated with him in the use of the radium, he giving the x-ray, and we have gotten most satisfactory results.

In regard to these cases I think a biopsy should always be done to determine exactly what type of cancer of the cervix we are dealing with.

In regard to uterine bleedings, such as is seen between thirty-five and forty years, I think it is very essential, as has been brought out, that we do a diagnostic currettment so as to rule out any possibility of a malignancy. That is, I think, a very essential feature. A large number of cases of bleedings may also have a complication, some trouble in the tubes or parametrium. I think that it is very important that we rule out the fact that there is no latent infection there, for if we use radium in these cases, we often light up this infection with often disastrous results.

I find that in these cases of bleeding about the climacteric period of life the cervix is often open, soft, and we can often slip in a radium capsule without any anesthetic, but I think it wise that this patient be given a little gas before the insertion of he radium, for at that time we can do our diagnostic currettage.

In regard to the leucorrhoea from the cervix I think that is a question that has not been thoroughly worked out just as yet. I have used the cautery method and also used the radium. From both methods I have gotten good results, but as yet I am in doubt about which to settle on finally.

I thank you.

DR. C. S. McMURRAY, Nashville: If we are to get anything out of this paper which I think is well written, giving the opinion of the radiologist, and when we say radiologist, we mean the men using both x-ray and radium and if we are to get the most out of the discussion that comes up from the standpoint of the surgeon, it seems to me that we have got to get back to some of the fundamentals. I say this, speaking from the standpoint of the gynecologist.

Dr. Newell brought this out and emphasized it, but I think it needs more emphasis. This is a knowledge of the mechanics and the technique of radium and radiation. I believe that I am correct in the statement that the majority of men today who are using radium do not really understand the fundamental principles of the agents with which they are working.

For instance, I have seen this: The capsule of radium placed in the cervix in which there is already an extension to the parametrium and the glands of the pelvis and the abdomen are already involved, here we get a stimulation of those glands further away that the radium is not reaching in sufficient quantity to destroy. Of course, they are not getting results here.

Here is the other man that does understand his mechanics, who does understand what he is dealing with, is using the agent in the proper manner because he has gone out and studied it and understands it.

Dr. Newell said he had cases that had come in on a cot and are now well and healthy. This is true, because he has combined the use of radium and deep therapy x-ray on those cases and has not overstimulated them. So, the one point I want to emphasize is, the fact that all of us (speaking from a gynecological standpoint) does owe it to himself and patient to study x-ray and radium in order to know the agents with which he is dealing, so that he will get better results.

I have two patients, I can recall one, of whom had fibroid tumor that was about the size of a two-and one-half or three months' pregnancy and who has a normal uterus at present following radiation. My advice today would be to do hysterectomy on those patients and not radiate them. These patients get more morbidity over a long period of treatment than if hysterectomy is done, but my one emphasis is, that we should know more about the agents with which we are dealing.

DR. LAWRENCE, (closing): I wish to thank the gentlemen for their interest in this subject and for their leniency in the discussion, particularly Dr. Barr. (Laughter). I expected some remarks from him, after my prediction that surgery, at least in this one condition, is dying. He said the surgeons weren't all dead yet. Of course they are not—they die hard, and in the words of the not very late Bob Fitzsimmons "The bigger they are, (glancing at Dr. Barr) the harder they fall." (Laughter.) They died hard on cancer of the cervix. It took them about ten, fifteen or twenty years to die, but they are as dead as a door-nail now on that particular condition, and this they all admit. They are in the process of dying now to some extent on the matter of the goiter, about half dead on that, but I don't think they will ever be wholly dead. I do think that more than fifty per cent of goiter cases can be better managed by radiation.

Now, a good deal of the discussion was taken up by criticism of my remarks for the lack of diagnostic measures carried out. I didn't even mention the word "diagnosis," didn't say anything about diagnostic measures, but in the words of the lamented and beloved Frank Smythe, all of these patients that I handle are passed through the hands of a "competent gynecologist" and I rely on their diagnosis to a great extent. After every diagnostic measure has been carried out, then given a woman past thirty-eight years of age, I say radiation instead of surgery for fibroid tumors.

Given a case of menorrhagia, at the approach of the menopause, nothing else being found wrong with the woman, radiation is certainly the procedure of choice.

As to radiation sickness, all I said was that it could be more easily regulated by x-ray methods than by radium methods. It is customary to give nearly a full dose of radium at the first application, and hope that the patient will not experience much radiation sickness. To give fractional doses of radium to avoid nausea, would require much hospitalization and many applications of radium with their attendant discomfort to the patient. With the x-ray method there is practically no discomfort to the patient. She lies fully clothed upon a couch, and the total dose to be given is divided into such fractions as the patient can stand daily without undue nausea or depression.

Before I forget it, I wish to suggest to Dr. Crutchfield skin incision only for "cancer phobia" instead of a complete hysterectomy. (Laughter.)

I wish to thank Dr. Anderson for confirming, at least, some of the statements made by me.

One other thing is of some importance, I didn't mention it because I felt disinclined to stress it. It has been brought up, however, and must receive some comment. Of course we all know that both x-rays and radium rays are quite capable of doing an untold amount of harm. But this is no more true of radiation than it is of the surgeon's knife. In the hands of a competent surgeon the knife is doing an untold amount of good and a minimum of harm. The same is true of radiology.

The field of radiology is a very broad one and requires as much study and experience as any other branch of medicine. One of the most important things for the radiologist to know and ever hold in mind is the physical laws governing the distribution of radiation within the tissue subjected to its influence.

In general one must know his "stuff" in order to get the most out of it.

Order Blank for Space in Professional Directory

To Tennessee State Medical Association,
510 Doctors' Building, Nashville, Tennessee.

Name ____________________ M.D.

Specialty ____________________

Office address ____________________

City ____________________

Bill me $4.50 quarterly for one-tenth page inserted twelve times.

The Directory will be classified under the proper general heading when sufficient number of spaces under each heading have been taken.

A STUDY OF 500 BREAST CASES WITH SURGICAL END RESULTS*

W. O. Floyd, B.S., M.D., F.A.C.S. and W. D. Haggard, M.D., F.A.C.S., Nashville

IT is estimated that over five thousand women in the United States die annually of cancer of the breast. Theoretically each and every one of these deaths are unnecessary. If a woman is educated to the likelihood of growths in the breast being malignant and their entire curability by early surgery, we should be able to save between eighty per cent and ninety per cent of cancers of the breast. If the patient is not aware of the possibility of new growths, never examines herself and never has herself examined carefully, as she should at least once a year, for this as for any other abnormalities or her medical attendant advises delay and the growth extends to the axilla, then her chances of recovery are cut down to under twenty per cent. Deaver says if the axilla is not involved, eighty per cent have permanent cures.

While it is estimated that about five per cent of cancer in one breast occurred simultaneously or subsequently in the other, as a rule when there are a number of small, lumpy growths in both breasts, it is not cancer. The lumpy, shotty breast of chronic mastitis rarely becomes malignant.

Bleeding Nipple. A bleeding nipple does not necessarily mean carcinoma. In fact, the majority of cases of bleeding nipple are benign and can be so treated but a bleeding nipple with a tumor is malignant, or to put it the other way, a tumor close to the nipple may have bloody discharge. The majority of bleeding nipples are due to little papillomata in the duct and the mapority of them are benign but if the patient has a lump then it must be regarded as malignant. If the patient is over thirty-five and cannot be under observation it is wise even in the absence of definite tumor to excise the area for miscroscopic diagnosis on account of the possibility of dendritic cancer.

Examination of the Breast. To thoroughly examine the breast, the patient should be in a prone position with the hands extended over her head and in a good light. Refrain from asking the patient where the lump is or which breast is involved. Inspect them both carefully for any irregularities in contour, any dimpling or discoloration.

In palpating the breast, it is deceptive to grasp the breast between the thumb and fingers. The breast tissue itself is thus palpated and imaginary lumps or tumors seem to be felt. When the breast is palpated between the extended fingers and the chest wall, the gland will flatten out. The apparent lump was only normal breast tissue that one bunches up and not a new growth. We have repeatedly demonstrated this error to patients and their attendants who have insisted that a tumor was present when none existed, whereas a true neoplasm of the mammary gland can be felt distinctly between the ends of the extended fingers and the chest wall no matter how small.

Is there a feeling of a worm like body underneath the areola of the nipple? If so, it is probably not malignant but a dilatation of the duct as a result of lactation. In such cases, galactocele often forms and during its excision which is not always necessary, one will see the enlarged milk ducts that still contain thick, milky fluid.

If there is a distinct lump, careful, gentle palpation with the ends of the fingers should determine its size, positon, mobility and whether or not it is fixed to the chest wall. The outer and upper quadrant contains the largest number of tumors (benign or malignant), the inner and upper quadrant is the next most frequent site, and near the nipple the third most frequent location. Inspection determines the condition of the nipple, whether habitually inverted. If it is in one breast and recent, it is usually the result of a tumor and is elevated above the sister nipple. The contracture of the tissue elevates the nipple, especially in the central zone and is a classical sign of advanced malignancy.

---

*Read before the Tennessee State Medical Association, Jackson, April 9, 10, 11, 1929.

Lesions of the nipple especially when red, angry and granular, can sometimes be relieved by active local, cleansing measures but if it does not quickly subside, Paget's disease must be considered. It should be removed with the cautery, will probably remain well, but if neglected and allowed to advance extensively, it can never be cured.

When milk can be expressed from the nipple, even though a small growth is present, it is probably galactocele that does not require operation, especially if there are several lumps, two or more. But if no milk can be expressed, one must not be deluded in the presence of a tumor, but remove it promptly for naked eye and microscopic study.

The encapsulated adenoma is always benign. The blue-dome cyst is always benign if it contains clear or slightly cloudy serum. "Blue-dome cysts" that contain dark, grumous, thick, bloody material are regarded as malignant by Bloodgood and the whole breast should be completely removed. Both can be recognized by the naked eye after removal from the breast. A small, single definite tumor had better always be explored and the tumor studied both microscopically and with frozen section before the breast is sacrificed. If the tumor is not definitely encapsulated and there is any doubt about its malignancy, the breast had better be amputated and the axilla cleared as in the radical operation for cancer. Of course if there is definite clinical evidence of malignancy, such as enlargement of the axillary glands, dimpling, retraction of nipple, etc., it is extremely unwise to explore the tumor but to treat it frankly as carcinoma by wide extirpation and axillary disection and not invade it primarily.

The radical operation which we have employed for cancer of the breast has been of the Halsted-Meyer type in which not only the breast but both pectoral muscles are removed and the entire axillary contents from the apex down, are removed en bloc with the breast. Great care is taken to clear Mohrenheim's fossa of all glands and fat and fascia and to make such a clean sweep of the axilla that everything is taken except the large vessels, the brachial plexus, the long respiratory nerve of Bell and the subscapular nerve. The chest wall is bared of muscle and on the outer aspect of the axilla, the latissimus dorsi is clearly seen when this operation is completed.

In 1922 one of us* reported observations and results in 255 tumors of the breast that had been seen during the previous twelve years with 45.7 per cent five to ten-year clinical cures in 111 traced cases of carcinoma. During the past seven years (up to March, 1929) 245 additional breast cases have been seen, making a total of 500 cases with which this report deals.

Our chief interest will be in the malignant group, of which there were 126 in the first report and ninety-two in this report, making a total of 218 cases, or about forty-four per cent of all cases seen. In 1910, our records contained no histories of benign tumors of the breast; seven years ago the ratio was about fifty per cent, whereas the present series shows the benign group to constitute sixty-two and one-half per cent of the total cases seen. This improvement, we believe, is due to the education that has been carried on in the campaign against cancer both by the medical profession and the lay press. Yet, apparently, there remains much to be done if we hope to improve our results very materially. For example, in our last series of ninety-two malignant cases, twenty-two, or nearly one in every four, were regarded as inoperable because of extensive metastasis, or were recurrent, while forty-six cases of the seventy that were operated upon showed axillary metastasis microscopically and clinically, thus making a total of sixty-eight cases, out of the ninety-two seen, with axillary extension. Thus approximately three cases out of every four seen had axillary involvement at the surgical consultation.

---

*Haggard and Douglass, Jour. of the A. M. A., Feb. 17, 1923.

In this series there was practically no improvement in the early recognition of cancer of the breast, as there was also about eighty per cent with metastasis in the first group, and twenty-seven of the 126 were considered incurable in the first group.

Of the 245 cases examined, eighty-four were operated on for benign lesions and ninety-one were not operated upon. Of the ninety-one not operated on, fifty-two of them were diagnosed either as a chronic mastitis or in a number it was questionable whether there was any lesion or not. No cases of chronic mastitis were operated upon unless one or more definite tumor masses were palpable and progressive. There were seventeen cases in this class that had very definite tumors and were advised to have operation, but for one reason or another operation was postponed or declined.

Of the eighty-four cases that had benign lesions excised, thirty-six of them were fibroadenomas, eight of them being cystic in character. Twelve were chronic mastitis, seven being cystic, while eleven were so definitely benign that no laboratory report was made. Five were blue-dome cysts, four abscess, three were simple cysts, and three were galactoceles. Two were infected cysts, two tubercular cysts, two sebaceous cysts and one each of mucoid cysts, lipoma and papillomatous cysts, non-malignant, and one was a tumor removed elsewhere and referred to us for wound dressings. In chronic cystic mastitis the breast should be examined carefully every six months to a year to ascertain that no malignant tendencies develop and even after removal of a benign cyst the patient should be kept under observation for detection of any recurrence or possible cancerous degeneration.

Twenty-two of the ninety-one non-operated cases were diagnosed as inoperable cancer, two of them having been operated upon at the Mayo Clinic and referred for postoperative radiation. Five others had metastasis of the lungs, as shown by the x-ray, while two others had metastasis to the spine, clearly shown in the film. Four had recurrences following operation elsewhere. Three were advanced cases sent in for radiation while the other four had supraclavicular or cervical metastasis.

Of the seventy malignant cases that were operated upon, forty-six were scirrhous carcinoma, nine adenocarcinoma (two having scirrhous changes), four were diagnosed as carcinoma unclassified. One of these unclassified cases had a large, rather painful breast of only two weeks' duration with axillary glands. A Halsted operation was performed and the glands were reported as metastatic carcinoma, but the breast was sectioned throughout and no primary focus could be found. This patient was sixty-one years of age and died three months later with what was thought to be metastatic carcinoma. There were seven medullary cases, two having scirrhous changes. Two were small, round-celled sarcoma, one Paget's disease of the nipple and one papillary malignant cyst.

Of the seventy malignant cases operated upon, one of them (Mrs. H. ——) had a Halsted operation of each breast. This patient was fifty-five years of age and had had a tumor of the left breast for two years. She also had a tumor of the right breast for ten months. There was axillary enlargement on the left side. A Halsted operation was performed on the left breast and at the same time a tumor of the right breast was removed. The tumor from each breast was reported as scirrhous carcinoma with left axillary involvement and three days later a Halsted operation was performed on the right side. This patient is living and well now at the end of six years although she has considerable edema of the left arm due to the complete axillary dissection with some obstruction to lymph return. We regarded that as an example of lymphatic extension as described by Stiles and not a primary independent neoplasm. Bilateral mammary cancers occur in 4.9 per cent (McWilliams). If the cancer occurs in both breasts the prognosis is more grave than if they are consecutive. Another of the malignant cases was diagnosed as chronic, cystic mastitis microscopically after excision of the tumor in a patient aged forty-five who had had a tumor for several months. This patient returned eleven months later with a large cauliflower carcinoma of the breast with axillary involvement, and was not operated upon again. She died a short time afterward from metastatic carcinoma. This was the only case in the malignant group, so far as known, in which the laboratory report was in error. The preoperative diagnosis of malignancy was in error three times. In each instance the patient was within the cancer age varying from forty-five to sixty-two and had observed the tumor in the breast for several months and in each case had palpable axillary glands at the time of operation. All three cases had Halsted operations, the laboratory report being that of a benign lesion with hyperplasia of the lymph glands, supposedly due to the chronic mastitis. These cases have remained well from four to six years following operation.

Of the seventy cases operated upon, forty-six of them had a positive report of axillary metastasis. In eight cases the axillary glands were reported as negative, while sixteen cases had no report on the axillary tissue, evidently such a request not having been made. When axillary glands are palpable the case is no longer early. Four times as many will die as when the disease has not been neglected and allowed to progress in its fatal march to the axillary glands. We have had no permanent cures in cases where the disease had still further extended to the glands above the clavicle.

Sixty-eight (68) Halsted operations were performed (two on one patient) and nine cases had amputation only. Three of the nine were done with the cautery for ulcerating growths, two of which had the axilla dissected, while the other case had radium in the axilla. Three of the amputations had a laboratory report of chronic, cystic mastitis. The three remaining amputations were done for sloughing breasts in far advanced malignant cases.

There were ninety-one excisions of the tumor, seven of these later having Halsted operation after the laboratory report proved the tumor to be malignant. Two of these were operated upon immediately following frozen section. One of these cases, forty-five years of age, with a tumor of four months' duration died twenty months later with what was thought to have been a brain metastasis. The other case operated on immediately following frozen section, is living and well at the end of three and a half years. One other case was operated on two days after excision and three other cases were operated on three days after excision. The case operated two days later was forty-seven years of age and had had an adeno-carcinoma for eighteen months. She is now living and well at the end of five years. One of the three cases operated on three days following excision was only thirty-five years of age and had noticed a tumor only a short time. She had had a tumor removed the year previous from the same breast that was reported as a mastitis. The laboratory report following our excision proved to be scirrhous carcinoma. A Halsted operation was done and this patient died four years later with a metastasis. Owing to a recurring tumor in the same breast the tissues of both tumors were sent to Bloodgood and his report checked with our reports, namely, that the first tumor was benign and a year later the tumor was malignant. The other two cases having Halsted three days after excision were thirty-seven and forty-five respectively and are living three and a half years and seven years respectively following Halsted operation. The seventh case of this group had delayed her complete operation seven weeks following excision of the tumor that proved to be adeno-carcinoma. This patient was forty-five years of age and had noticed the tumor for two months. She is now living and well at the end of five years.

While we believe that every tumor in a woman past the age of forty should have a microscopical examination made particularly at the time of its removal, according to these reports it does not seem to be as important that the patient have an immediate operation as was one time thought to be the case. The most favorable age for cure after operation is between fifty and fifty-five.

Murphy said it is almost impossible to cure a fat woman who is young, of mammary cancer.

Of considerable interest in connection with this report are the facts concerning those cases that had x-ray or radium treatment either before or following operation. Several (seven) cases had preoperative x-ray treatment which apparently has not affected the mortality of these cases. Of the seventy that were operated upon in this series, forty-six or sixty-six per cent of them were given either x-ray or radium or both, postoperatively, while the remaining third did not have any postoperative radiation. Thirty-eight (38) of fifty-four per cent of this series are dead. Thirty-two (32) of these thirty-eight cases or eighty-four per cent of them either had x-ray or radium or both. Of the thirty-two cases that are now living, twenty-two or sixty-nine per cent of them had x-ray while ten or thirty-one per cent of them did not have x-ray.

Thus considering the living cases, we find that only sixty-nine per cent of them had radiation while eighty-four of the dead had radiation. This has been a considerable disappointment to us because of the failure of the radiated cases to do better than those not rayed, but we believe that in all fairness we must say that as a rule the most advanced cases were the ones that were given radiation treatment in addition to the surgery. However, the fact remains that our highest percentage of both five and ten-year cures were in the cases operated upon previous to 1916, before the use of the x-ray as will be noted later.

End Results. Out of the seventy cases operated upon in this second series, fifty-one had been operated upon for more than three years. Twenty-five (25) or forty-nine per cent of them remained symptomatically well during this time.

In the first series of 111 traced cases only fifty-four of them had x-ray as compared to sixty-six per cent in the second series, but there were only forty-nine per cent of three-year cures in the second series as compared to 58.3 per cent in the first group.

In the last series there were thirty cases operated upon for more than five years with nine or thirty per cent, whereas in the first group there were 45.7 per cent of five-year cures.

Of the ten to eighteen-year cures there were twenty-four cases, only seven of whom had x-ray treatment. Two cases are now living and well eighteen years, one seventeen years, two sixteen years, two fifteen years, three fourteen years, one thirteen years, four twelve years, one eleven years, and six ten years respectively. Two others lived eleven and twelve years respectively and died of myocarditic and acute intestinal obstruction. Twelve of the above twenty-four cases were operated upon previous to 1916 when x-ray use was begun, there being thirty-two cases all told operated upon during this period with thirty-seven and one-half per cent of ten to eighteen-year cures. The other twelve cures in this ten-year group were operated upon during the use of the x-ray, there being thirty-six cases operated upon in this group, giving a ten-year cure of thirty-three and one-third per cent as compared to thirty-seven and one-half per cent in the cases that had no x-ray. Besides this, five of the twelve cases in this group had no x-ray treatment. Hence we not only failed to improve our results by the additional use of the x-ray, in these cases, but our percentages of cures were not as good as in the cases that did not have x-ray. These findings check very much with the recent report of Harrington of the Mayo Clinic, who reports the end results in 1,859 surgical cases, 1,096 of which received x-ray treatment while 767 did not. He compares the three-year, five-year and ten-year results in the two groups, also giving the average duration of life. The cases receiving postoperative irradiation showed a slight increase in the number living three and five years over those who received no treatment. But at ten years, the group which had not received postoperative treatment showed the highest percentage of living patients. Of 953 patients known to have died of metastasis, those who did not receive x-ray treatment had an average duration of life one year longer than those who were so treated. His conclusion is that x-ray therapy has not been of great value as an auxiliary to surgery in those cases.

Of the ninety-nine cases considered operable in our first group, ninety-four were traced at the present time (111 operable and inoperable cases having been traced in the first report) making 164 operated cases traced and herein reported with the following end results:

Seventy-seven out of 145 operated lived three years or more, being 53.1 per cent three-year cures. Fifty-four cases out of 124 operated lived for more than five years, being 43.5 per cent five-year cures. Twenty-four cases out of sixty-eight operated, lived ten to eighteen years, making 35.2 per cent ten-year cures.

Of the seventy complete operations for malignancy in the last series, there was only one death, a mortality of 1.4 per cent. The death occurred four hours after operation from cardiac failure in a fleshby, flabby woman of seventy-three, three weeks after an influenzal infection. There were no deaths in the eighty-four non-malignant cases operated upon. Thus in the 154 malignant and non-malignant cases combined, there was only one death in this series, or a mortality rate of six-tenths per cent.

DR. HAGGARD, Nashville: There is little I can add. The thing that struck us most in our study has been the depressing fact that the average duration of these growths is something over two years. The other astounding fact was that Deaver says eighty per cent can be cured when limited to cases of the breast. We have been a little more fortunate than that, but it is a dubious picture.

Now, I have been very much impressed with the apparent lack of impression that we, as a profession, have been able to make upon our people. I deprecate that. We have cancer campaigns and considerable good has been done, but we haven't yet talked to the women of this country, particularly as they reach that mellow period of life, when they should be the happiest, have a great danger of a lump in the breast.

I have not, however, entirely given up hope. I had this experience: In one week I had a large number of cases of cancer of the breast, so I asked some of the patients, "How did you happen to come?" One said, "Why, Doctor, there is an advertisement in the Ladies' Home Journal about a lump in the breast, and I thought I had better come to see a Doctor."

My gracious, why can't great humanitarian institutions, we have foundations for everything, give more publicity to that fact. It is a terrible thing to think that we educate women in the higher arts and classics and they do everything, for mankind and still the one thing that they don't know is that a tumor in the breast after passing the age of thirty-five will be malignant in ninety per cent of the cases. Why should she carry this growth?

Now, you have all had the experience. Any cancer that will turn outward is more favorable. One of my oldest cases lived twenty odd years, ulcerated growth. Just to leave that subject for a minute, now how it is one woman will live indefinitely. My father operated twenty-six years before recurrence. They passed up the grandular cases, amputate the breast. This woman stayed well twenty-seven years, had little growth in the armpit from the irritation of the crutch, I think. She had taken up Christian Science. Shortly after that, turned over in bed and fractured right femur.

I feel strongly and I speak strongly, but you see the sadness of our result, and still when we first published 45.7 per cent, Dr. Douglass worked them out with great effort, we were delighted. And now, with increasing experience and all we come to find out that our present results are not as good as our past results. That will fluctuate.

The fact still remains that we can cure and save, no matter how bad they are, no matter how bad the case is. Every woman must be given a chance. We have labored at the x-ray treatment every month for six months, in all the group of patients, but without apparent benefit. I don't know that we will give it up, certainly give anybody the benefit who wants it.

In conclusion, I want to say that the whole question of malignancy until that wonderful time arrives, when we will have solved the great problem of cancer, our greatest duty to the world at this time is the training of ourselves in its early diagnosis and the faithful effort to cure.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1930

EDITORIAL

GREETINGS

We wish to represent the executive force of the Tennessee State Medical Association in extending to the membership a hearty New Year's greeting and our best wishes for the New Year.

May we suggest also that we make a New Year's resolution to the effect that we will push harder and do more toward making our organization more complete, and even more successful, in the year 1930 than it was in 1929.

Much has been achieved in the year 1929 but there is always room for improvement.

OUR CENTENNIAL CELEBRATION

Plans and arrangements for the centennial celebration are in satisfactory condition.

On behalf of the program committee we are able to report that there will be on the scientific program, as guest speakers, a large group of the most outstanding medical and surgical men in the United States. A partial list of those who have accepted is as follows:

Dr. John B. Deaver, Philadelphia,

Dr. W. J. Mayo, Rochester,

Dr. C. Jeff Miller, New Orleans,

Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, Chicago,

Dr. F. H. Lahey, Boston,

Dr. H. S. Cumming, Surgeon General, United States Public Health Service, Washington, D. C.

Dr. J. O. Polak, Brooklyn,

Dr. Carey P. McCord, Cincinnati.

Such a large number of outstanding men has never before appeared on our state program.

There will be an event on each of the night sessions of unusual interest to the entire membership of the state society.

We have requested Dr. G. C. Savage, Chairman of the Committee on Medical History, to prepare a statement concerning the activities of his Committee. This statement appears on the editorial page.

We have also asked Dr. W. D. Haggard, Chairman of the Committee on Arrangements for the Nashville Academy of Medicine and Davidson County Medical Society, to make a statement concerning the arrangements for the meeting. His statement also appears on the editorial page.

The time is rapidly approaching and we must all be on the alert.

MEMBERSHIP DUES FOR 1930

Officers of component societies and members of the state society for the year 1929 please take notice.

As has been repeated on this editorial page, the House of Delegates passed a resolution at the Jackson meeting which had the effect of making the fiscal year, the membership year and the subscription year of the Journal all conform to the calendar year.

Heretofore you have continued to receive your Journal until the May issue even though your dues were not paid. That cannot happen this year.

The January 1930 issue of the Journal will be mailed to all members as of record for December, 1929. This is a courtesy and not an obligation.

Members are requested to pay dues to county secretaries. The county secretaries are requested to forward dues promptly to the state headquarters.

OUR MEDICAL HISTORY

Mr. Editor: This is to inform your readers that the work of preparation of the History of our State Medical Association is making satisfactory progress. Our writer has the matter well in hand, and will be able to complete the writing by March 1. The committee is now procuring bids from publishers. We expect the type-setting to begin by March 1, and that the book will come from the press about April 8. We expect it to be a book in which we all will take pride.

G. C. SAVAGE, M.D., *Chairman.*

THE HUNDREDTH ANNIVERSARY

It was meet and proper that the capital city should have been suggested by the House of Delegates for the Hundredth Anniversary meeting of the Tennessee State Medical Society, April 8, 9, and 10. The privilege and obligation laid upon the Nashville Academy of Medicine and Davidson County Medical Society to entertain the parent body on its centenary, have been accepted and preparations are being made for the perfection of the details of a meeting which should be memorable from a historic and scientific standpoint.

The constitution provides that Middle Tennessee has been the residence of the meeting every other year and it seems fitting that Nashville should be the place for a great home-coming celebration.

It is inspiring to recall the brave efforts that our forbears made in the organization of this society and in making long journeys to the capital, requiring days on horseback, to its inaugural and other early meetings.

Much of the old-time savor and historic personages will be made to live again in memorials, in pictures and in the spoken word. Tennessee has been unusually blessed with medical men of great prominence who by their works and lives have added to the development of the healing art in this state and throughout the southwest. For many years Nashville through its medical colleges was the foster-parent of medicine in this section and her sons are scattered far and wide over this vast territory. At one time a class of four hundred and fifty-four men assembled here, which at that time was the largest class ever gathered together outside of Philadelphia. The teachers of this great band of medical pioneers were men of noble stamp and of dignified miens. Their ideals were of the highest type and their efforts in the advancement of science and in the alleviation of suffering were noteworthy. When we reflect upon the limited resources which they could command, it is indeed a subject of inspiration that we, as a result of their early work and that which followed, are privileged to carry on investigations and the control of disease in such a highly satisfactory manner.

To epitomize, the century that has gone by in the life work of the Tennessee Medical Society, some of the greatest scientists and most prominent figures in American medicine have graciously consented to be present, add their quota in the memorialization of its proud history, in evaluating its present methods, and prophecy for its brilliant future. It will indeed be a feast-day in the annals of Tennessee medicine. From a historic point of view, the high points in the glorious achievements of our profession will be unfolded. From a scientific standpoint perhaps the most notable group of men ever gathered together at one time from other parts of our country, will add their acclaim to its battles for science for the accomplishments of present-day medicine and an augury for the future victories of medicine. It is confidently believed that a large outpouring of the doctors in Tennessee and sister states will occur on this gala occasion. Every effort is being put forth to make the century-mark meeting measure up to the requirements and demands of so historic and memorable a celebration.

W. D. HAGGARD, *Chairman.*

NEWS NOTES AND COMMENTS

PROBABLY THE OLDEST DOCTOR IN TENNESSEE

In December Dr. S. R. Miller, the East Tennessee member of the Committee on History, visited Dr. Joseph Rogers Walker at Rogersville, Tennessee. The doctor was 98 years old last August. His physical condition would compare favorably with the average man twenty or more years younger. His mind is clear, and his memory wonderfully good. The Centennial History will no doubt contain an interesting account of this unusual doctor—a connecting link between the historic past and the absorbing present.

Dr. D. D. Howser has moved from LaFayette to Fayetteville.

Dr. J. R. Storie of Cookeville was operated on last month in a Nashville hospital.

Dr. A. W. Lewis of Copper Hill was under treatment in a Knoxville hospital several weeks in December.

Drs. A. G. Kyle, Frank Faulkner, Robert Baker and Earle Ford have been appointed city physicians for the city of Knoxville.

Dr. Paul H. Cardwell, who has been house physician at the Fort Sanders Hospital, intends to start private practice in Knoxville.

About the middle of December Dr. and Mrs. M. A. Beasley, of Hampshire, returned home from a visit to Florida. Near Forsythe, Georgia, they were in an auto accident which delayed them about two weeks.

Dr. W. S. Lockert, of Ashland City, fell on the ice and sustained a broken ankle. He was treated in a Nashville hospital.

Dr. Andrew Hollabaugh, Jr., announces the opening of his office, suite 242 Doctors Building, Nashville. Practice limited to eye, ear, nose and throat.

Dr. J. T. Herron has been practicing in Jackson since 1884. A recent issue of the Jackson Sun contained an outline of Dr. Herron's history and a tribute to his activities.

During November the profession of Knoxville witnessed the retirement of Dr. L. L. Sheddan, one of the oldest and outstanding supporters in the local profession.

After a score of years in Knoxville, he retires to his old home in Fayetteville to continue his profession among his earliest friends in his long professional career.

His going from Knoxville was not without regrets among his professional brethren as well as his clientele.

As a parting tribute two banquets were given, one by the Medical Society and the other by the "E" Club, a society composed of the young members of the profession which Dr. Sheddan was partly instrumental in the foundation. In fact, a cane bearing the inscription "To the Daddy of the 'E' Club" was presented Dr. Sheddan as a memento to his participation in its origin and to the esteem in which members held his person. Various tributes were paid by the members to the activity of one of the most ardent advocates of organized medicine, who has held such offices as President of the Knox County, the East Tennessee, Middle Tennessee and the State Association, and has been the Delegate to the American Medical Association for the past two terms.

It was with regret the profession in Knoxville gave him up.

1930 Officers

We have been notified of the following elections in county medical societies. *All secretaries are requested to send us the names of the officers of their societies.*

Anderson County—Dr. H. B. Hicks, Clinton, *President;* Dr. J. M. Cox, Coal Creek, *Vice-President;* Dr. J. S. Hall, Clinton, *Secretary.*

Bedford County—Dr. G. W. Moody, Shelbyville, *President;* Dr. T. H. Woods, Bell Buckle, *Vice-President;* Dr. W. H. Avery, Shelbyville, *Secretary-Treasurer.*

Bradley County—Dr. W. H. Sullivan, Cleveland, *President;* Dr. W. B. Campbell, Cleveland, *Vice-President;* Dr. E. R. Ferguson, Cleveland, *Secretary.*

Blount County—Dr. Geo. W. Burchfield, Maryville, *President;* Dr. E. H. Lowe, Maryville, *Vice-President;* Dr. Jno. A. McCulloch, Maryville, *Secretary.*

Campbell County—Dr. H. T. Fortner, Jellico, *President;* Dr. Wm. Gaylor, Jellico, *Vice-President;* Dr. F. A. McClintock, Newcomb, *Secretary-Treasurer.*

Carter County—Dr. W. G. Frost, Elizabethton, *President;* Dr. W. H. Longmire, Elizabethton, *Vice-President;* Dr. E. T. Pearson, Elizabethton, *Secretary-Treasurer.*

Dyer-Lake-Crockett Counties—Dr. W. W. Holland, Dyersburg, *President;* Dr. R. W. Griffin, Tiptonville (Lake County), *Vice-President;* Dr. E. S. Hopper, Alamo (Crockett County), *Vice-President;* Dr. E. H. Baird, Dyersburg, *Secretary.*

Greene County—Dr. L. E. Coolidge, Greeneville, *President;* Dr. C. E. Laughlin, Greeneville, *Vice-President;* Dr. M. A. Blanton, Mosheim, *Secretary-Treasurer.*

Giles County—Dr. E. M. Fuqua, Pulaski, *President;* Dr. F. C. Gaines, Pulaski, *Vice-President;* Dr. T. F. Booth, Pulaski, *Secretary;* Dr. G. D. Butler, Pulaski, *Treasurer.*

Hamblen County—Dr. S. M. Ryburn, Morristown, *President;* Dr. H. G. Pangle, Russellville, *Vice-President;* Dr. P. L. Henderson, Morristown, *Secretary-Treasurer.*

Hardin-Lawrence-Perry-Wayne Counties—Dr. J. H. Pickard, Hohenwald, *President;* Dr. J. H. Tilley ,Lawrenceburg (Lawrence County), *Vice-President;* Dr. O. H. Williams, Savannah (Hardin County), *Vice-President;* Dr. O. A. Kirk, Linden (Perry County), *Vice-President;* Dr. H. C. Boyd, Waynesboro (Wayne County), *Vice-President;* Dr. G. N. Springer, Hohenwald (Lewis County), *Vice-President;* Dr. C. C. Stockard, Lawrenceburg, *Secretary-Treasurer.*

Hickman County—Dr. Jno. S. Beasley, Centreville, *President;* Dr. W. K. Edwards, Centreville, *Secretary.*

Jackson County—Dr. C. E. Reeves, Gainesboro, *President;* Dr. N. M. McCain, Gainesboro, *Vice-President;* Dr. L. R. Anderson, Gainesboro, *Secretary.*

Knox County—Dr. Ralph R. Monger, Knoxville, *President;* Dr. M. S. Roberts, Knoxville, *Vice-President;* Dr. Jesse C. Hill, Knoxville, *Secretary.*

Maury County—Dr. J. T. Hardison, Carters Creek, *President;* Dr. P. H. Faucett, Columbia, *First Vice-President;* Dr. Wallace Wilkes, Columbia, *Second Vice-President;* Dr. O. J. Porter, Columbia, *Secretary.*

Monroe County—Dr. P. E. Parker, Sweetwater, *President;* Dr. W. H. Arrants, Sweetwater, *Vice-President;* Dr. H. M. Kelso, Madisonville, *Secretary-Treasurer.*

Robertson County—Dr. J. W. Thomas, Cross Plains, *President;* Dr. S. J. Fentress, Goodlettsville, *Vice-President;* Dr. W. F. Fyke, Springfield, *Secretary.*

Shelby County—Dr. J. B. Blue, Memphis, *President;* Dr. W. E. Williamson Memphis, *Vice-President;* Dr. A. F. Cooper, Memphis, *Secretary;* Dr. T. N. Coppedge, Memphis, *Treasurer.*

Smith County—Dr. R. E. Key, Monoville, *President;* Dr. W. B. Dalton, Gordonsville, *Vice-President;* Dr. B. J. High, Elmwood, *Secretary.*

Tipton County—Dr. G. B. Gillespie, Covington, *President;* Dr. J. C. Witherington, Munford, *Vice-President;* Dr. L. J. Lindsey, Covington, *Secretary-Treasurer.*

Washington County—Dr. A. J. Willis, Jonesboro, *President;* Dr. J. T. McFadden, Johnson City, *Vice-President;* Dr. C. W. Friberg, Johnson City, *Secretary-Treasurer.*

White County—Dr. Isaac Barnes, Bon Air, *President;* Dr. H. B. Ausbau, Doyle, *Vice-President;* Dr. S. E. Gaines, Sparta, *Secretary.*

Williamson County—Dr. J. B. Core, Allisonia, R. No. 1, *President;* Dr. J. W. Greer, Franklin, R. F. D., *Vice-President;* Dr. K. S. Howlett, Franklin, *Secretary.*

Wilson County—Dr. J. R. Doak, Watertown, *President;* Dr. Jno. W. Graves, LaGuardo, *Vice-President;* Dr. J. R. Bone, Lebanon, *Secretary-Treasurer.*

Tri-County Society: Benton-Carroll-Henry-Weakley—Dr. Geo. McSwain, Paris (Henry County), *President;* Dr. J. M. Smythe, Camden (Benton County), *Vice-President;* Dr. Virgil Massey, Huntingdon (Carroll County), *Vice-President;* Dr. T. W. Fields, Dresden (Weakley County), *Vice-President;* Dr. R. M. Little, Martin (Weakley County), *Secretary.*

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Spinal Anesthesia: Experiences of a General Anesthetist. Floyd and Romberger, M.D., Anesthetist, Lafayette, Ind. Current Researches In Anesthesia and Analgesia. November and December, 1929.

Spinal anesthesia is ideal to the surgeon and patient. Spinal anesthesia gives the anesthetist one more arrow for his ever ready anesthetic quiver. But, it means study, hard work and practice. If not, then, stay away from spinal anesthesia. Skill in lumbar puncture must be developed to the point of artistry. It demands the study of hydrodynamics of the spinal fluid and the fundamental laws governing diffusion, dissemination, capillarity, viscosity, and specific gravity.

Pitkin has evolved a controllable type of spinal anesthesia which means safety. He was the first to prove that gliadine, the viscid and mucilaginous content of wheat starch, when mixed with the anesthetic agent would retard its diffusion within the spinal canal and prevent its dissemination to the vital centers of the medulla. The upward extension of the solution can be controlled with accuracy, larger doses of novocain can be used and the anesthesia can be prolonged to a much greater degree.

Spinal anesthesia may be extended as high as the nipple line or clavicles without affecting respiration as the cervical plexus and the phrenic nerve are not envolved. Ephedrin is the sheet anchor in preventing the dreaded drop in blood pressure and avoiding syanosis and pallor. It is far superior to adrenalin whose effect is very ephemeral. He advises large doses of ephedrin and gives it before the splanchnic dilatation is complete, otherwise it has little or no effect.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Tinea of the Toe-nails as a Source of Reinfection in Tinea of the Feet. By Charles Mallory Williams and Else A. Barthel, J. A. M. A., Sept. 21, 1929.

In forty cases of tinea pedis, an organism of the ringworm group was recovered from the toe-nails, which were apparently normal. The abnormality of the nails was so slight that the patients were seldom aware of it; it consisted of slight discoloration, a dull rather than a shiny surface and a few longitundinal striae. The organisms were found in the nails long after the cutaneous symptoms had disappeared, and are probably the source of re-infection in many cases of tinea of the feet.

Treatment of Lupus Erythematosus With Gold. By W. F. Manley, July, 1929.

Manley used gold sodium thiosulphate in six cases of lupus erythematosus. In all five of the chronic discoid type there is a clinical cure. One patient with subacute disseminated erythematosus is still under treatment, and rapidly improving. In the five cases of the chronic discoid type in which treatment has been completed, the number of treatments given ranged from eleven to fifty-two. The duration of the disease does not seem to have any bearing on the number of treatments required. The only reaction noted in the chronic discoid type was a focal reaction in the affected areas with edema, erythema and tingling. One patient developed a polymorphous erythematous eruption which disappeared in two weeks following cessation of treatment. In only one case was there a recurrence. This occurred three and a half months after a series of six injections and cleared up again after another six injections, and the patient has remained well ever since. In one case, tuberculous adenitis devloped eight months subsquent to cessation of gold therapy but the lupus has not recurred.

INTERNAL MEDICINE

By R. B. Wood, M.D.
Medical Building, Knoxville

There is no condition in medicine where the lay public or the profession accept fate as inevitable so often in what is frequently a remedial condition as in the case of arthritides. Pemberton (A. M. Jr. of Med. Science, Nov., 1929) reminding us of the presence of this disease since the old Stone Age, states correctly that the problem has never received proper study. He says: "Owing partly to the refractory nature of the disease and . . . a curious inertia seems to have characterized the attitude of the profession."

The amount of disability arising from the incidence of arthritis and rheumatoid conditions is surprising. In Berlin it is 364 times greater than that due to tuberculosis. In England one-sixth of the sum expended under National Insurance Acts were for "rheumatic conditions." In Sweden there are four hospitals for the exclusive care of chronic arthritics.

An attempt at the simplification of the groups of arthritics by dividing all cases into the atrophic and hypertrophic has been done. Further study as to the etiology has been done, especially as to the role of focal infection, with the opinion that it is often only an episode in the causation of the disease acting like "the match to the priming." The committee has placed itself on record as believing that the underlying cause may be found in that background of heredity, constitutional makeup, disturbed equilibrium of the nervous system, chemical and other toxins. The view seems to have changed from the mechanical side to the chemical viewpoint as regards injury done by the bacterial infection. Zinsser even expresses the idea that rheumatic fever is an allergic condition in which the body is sensitized to a bacterial antigen, especially since so many varieties of bacteria have been found as causative agents by Small, Clausen, Swift and others. The frequency of exposure as the precipitating factor cannot be overlooked.

Pemberton believes that the atrophic forms of chronic arthritis may have a comparable cause. In 1920 he stated his belief in the fact that acute inflammatory rheumatism and the exacerbations of chronic arthritis were different only in degree rather than in kind.

The investigations of the arthritic from the standpoint of chemical analysis of the circulating blood has been so far of negligible valve. But the conspicuous changes in bone rarefaction or overgrowth force the possible problems of changes in chemical reactions as an explanation of those disturbances in the calcium and magnesium of the osseous tissue.

In some forms of arthritis a low metabolic rate is seen, in others an anemia, yet in others a favorable response is seen by a low caloric feeding. Suffice to say there is an inadequacy of response to abnormal physiological loads which indicates a pathologic deviation. As a result of favorable results in low dietaries, studies were undertaken in the laboratory to throw light on the problem. It was found that certain substances were removed more slowly from the blood of the arthritic. For instance in seventy-six per cent the diseased dextrose was more slowly removed and a higher percentage saturation of oxygen in the blood was found than is normally present. No chemical explanation could be found to explain it and the hypothesis was that the process was mechanical in nature, depending on changes in blood flow.

To more closely imitate the supposition, blood flow was cut off from three limbs with the result that dextrose and oxygen were found to behave as in the arthritis. The theory was further advanced that possibly vaso-constriction might account for the mechanical obstruction, so work on the blood was carried out to ascertain if some change of the blood count or change in the corpuscular element would justify such conclusions.

In a series of studies, Dr. E. G. Pierce has shown that the first drop of blood issuing from the arthritic is of lower corpuscular content than consequent drops. This is oposite to that known to be true in normal individuals, and must be the result of fewer cells or excess fluid in the peripheral vascular spaces. Those procedures known to benefit the arthritic such as the salicylates, coffee, external heat and massage induce a return toward the normal picture.

Studies were next conducted on the actual state of the capillaries as revealed by the method of direct inspection as devised by Lombard.

This was done by Pierce, Cajori and the author both on normal arthritic subjects with the result a slow or interrupted flow was demonstrated which was returned to normal by beneficial therapy and relapsed on cessation of treatment.

To further the study, experiments of interfering with the blood flow about the patella of dogs by means of purse-string ligutares was undertaken, as a result of which the x-ray revealed pathology similar to that in the patella of humans suffering with hypertrophic arthritis.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

Puerperal Inversion of the Uterus Classification for Treatment. By Foster S. Kellogg, Boston, Mass., Amer. Jour. Obs. & Gyn., December, 1929.

The author limits his short paper to inversion of the normal uterus subsequent to the birth of the child. Apparently, peurperal inversion of the uterus is statistically very rare, but undoubtedly, he says, that many cases die from this condition and are reported as simply, post-partum hemorrhage, for he and several others have reported seven cases. Most textbooks classify inversions into two types: first, the acute puerperal inversion that is discovered before the cervical ring forms; second, chronic inversion in which the patient has survived, and uterine involution is taking or has taken place. He is quite sure that there is still another type to be considered, and that is the sub-acute inversion which is discovered after cervical ring formation. And to this type, he says, that we as consultants most often see. The majority of the acute inversions cause death, either of shock or from hemorrhage in an effort to replace the uterus, and the chronic inversion simply requires the Spinelli type of cutting operation on the cervix with replacement and subsequent suture of same. In the sub-acute it is highly important to recognize that the old manual replacement from below is of extreme danger, in that the patient is prone to bleed freely, or from exhaustion go into profound shock due to an effort to dilate the edemotous cervical ring. It is likewise illogical to attempt the Spinelli operation in the face of blood oozing and distorted tissues and infection, therefore Huntington in 1927 devised the operation of abdominal replacement of the inverted uterus. In 1928, Huntington, Irving and Kellogg devised the technique with illustrations, which is simply opening the abdomen and with tenaculums, grasping near the region of the tubes, the fundas of the uterus and replacing it. Occasionally with a suspension operation. I recall that in that paper they did not do super-cervical hysterectomies as is brought out in this paper for those cases in which the uterus was long exposed to infection, often packed or reinverted, which is an excellent thought. The reviewer has fortunately had two acute inversions brought in from private physicians, one due on admission with the uterus completely inverted with the placenta intact, and no hermorrhage. This one apparently died of shock. The second one was an acute inversion in which the ambulance service was called to take the case in from post-partum hemorrhage. The uterus was completely inverted, but was easily manually replaced, uterus packed. Patient was discharged about the tenth day. This operation for the subacute type certainly appeals to me, and it is my belief that if such a case presents itself, I would carry out the abdominal replacement as advised.

Interstitial Pregnancy—Since the reviewers last article appeared in last months number on the above subject, he has had the opportunity to observe a very unique case. He is certainly in accord with Wynne who stated that interstitial is the worst type of tubal pregnancy. This was a four weeks interstitial pregnancy, he saw early and operated upon within six hours after rupture. The cornea was removed intact with the tube, the patient recovered. He wil report at a later date drawings of the horn and tube intact, and also microphotographs of section of the uterine and ismeal musculature to prove its absolute identity.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Tuberculin Skin Reactions. Charles Hendee Smith, M.D., Amer. Jour. Dis. Children. December, 1929.

A positive tuberculin reaction occurs if the tubercle bacillus has lived and grown in the body tested. The technic of the application of the Pirquet (epidermal) and the Mantoux (intracutaneous) tuberculin tests are described and discussed in detail. The Pirquet method is the simplest but least reliable of the two procedures, the Mantoux proving positive about two times as often as the Pirquet.

Following the development of these reports from European investigators indicated a high incidence of positive reactions in children, fifty per cent at five years of age, and ninety-four per cent at puberty giving positive reactions. Some years later American workers found a much lower percentage of children that gave positive tuberculin reactions, not over forty-five per cent at thirteen to fourteen years of age.

The author reports the results noted in testing by the Mantoux method, 7,668 children admitted to Bellevue Hospital for various complaints over a period of eight years, the age varying from newborn infants to thirteen years of age. Those tested during the first six months of life showed 3.38 per cent positive reactions; from six months to two years, from eight to 12.5 per cent postive. Runabouts, from two to six years of age showed 15.6 per cent to eighteen per cent positive; from six to ten years of age gave 26.3 to 29.7 per cent positive, and from ten to thirteen years of age the percentage positive was 38.8 to forty-three. These figures are very similar to those given in recent reports of tests made on childrn in Europe in which the Mantoux method was used.

From his findings the author concludes that not over forty to fifty per cent of children in the large American cities harbor the tubercle bacillus at puberty. He thinks the Mantoux test should be made on every child that is underweight, anemic or languid or who has an irregular unexplained fever. Positive reactions in these children mean that they have "tuberculous infection" which is latent or active and under intelligent care they usually do well. If they are neglected until the infection has migrated from the lymphatic tissue to the lungs, bones or meninges, cure is most difficult and many times impossible.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Surgical Aspects of Undulant Fever. Walter M. Simpson, M.D., F.A.C.P., and L.G. Bowers M.D., F.A.C.S. The American Journal of Surgery, Vol. VII, Nov., 1929. No. 5. Pg. 597-604.

1. Undulent fever has rapidly become a most important public health problem. Over 1,000 cases have been discovered in this country in the past few years.

2. Seventy-two cases have been discovered in and about Dayton, Ohio, during the past one and a half years.

3. Undulent fever possesses important surgical aspects, chiefly because of the ease with which it may be confused with appendicitis and cholecysttits in certain cases. In view of the predilection

of the oragnism for the genital tract it bears an etiologic relationship to certain cases of abortion, tubo-ovarian abscess, seminal vesiculitis, prostatitis, epididymitis and orchitis. The point manifestations of the disease make it a diagnosis problem for the orthopedic surgeon.

4. Contrary to the frequently expressed belief that undulent fever is difficult to recognize clinically, the clinical manifestations of the disease were sufficiently characteristic to enable physicians to make an initial diagnosis of undulant fever in over one-third of our cases.

5. The relationship between the consumption of raw milk from cattle infected with the organism of contagious abortion (Brucella abortus) and the occurrence of undulant fever in human beings has been established.

Pathological Lesions of the Gall Bladder. Conrad J. Baumgatner, M.D., Surgery, Gynecology and Obstetrics. Vol. XLIX. No. 6. December, 1929. Pg. 780-787.

A simplified grouping of lesions of the gall bladder has been prepared in a series of 4,575 gall bladders, and the clinical manifestations in each group have been studied for comparison. There are no characteristic symptoms or clinical data to differentiate the apparently earlier types of cholecystic diseases; in the later stages, however, certain characteristic data are present.

The clinical features of chronic catarrhal cholecystitis and strawberry gall bladder, or cholesterosis, were identical. The occurrence of stones in a fairly high percentage of gall bladders showing minimal pathological change further substantiates the theory that gall bladders may assume a normal appearance between attacks.

Chronic fibrous cholecystitis showed a higher incidence of gallstone colic, jaundice, chills, and fever than the groups of chronic catarrhal cholecystitis, and strawberry gall bladder, or cholesterosis. Stones were present in eighty-nine per cent of the cases in this group.

Acute and subacute cholecystitis may occur without appreciable increase in temperature or leucocytosis. Gall stones occurred in ninety-six per cent of the cases.

The symptoms of empyema of the gall bladder vary greatly. The chronic form usually is not accompanied by any grave manifestations; the acute form not infrequently is fulminating in character. Stones occurred in ninety-six per cent of the cases.

Gangrene of the gall bladder is associated with marked clinical manifestations. There is marked tenderness, and the temperature and leucocyte count are higher than in the acute forms. Stones occurred in ninety-six per cent.

Hydrops of the gall bladder was associated with stone lodged in the cystic duct in ninety-six per cent of cases. A mass was palpable in twenty per cent. The patients were not nearly so ill as patients suffering from the acute empyema or gangrenous types of cholecystic disease.

Papillomata occur more frequently than the reported frequency. The single papilloma is friable and easily overlooked. The relation between papilloma and malignancy is problematic.

Adenomata always occur in the fundus. Normally glandular tissues is not present in the fundus of the gall bladder; this may, however, explain the frequent occurrence of adenocarcinoma in this situation.

The common types of malignant lesions of the gall bladder are: carcinoma simplex, adenocarcinoma, squamous cell epithelioma, papillary carcinoma, and sarcoma. Stones are a common factor. Clinically malignant conditions of the gall bladder may be classified in two groups. In the first group the history is of mild cholecystic disease; in the second group, of long duration of colic with a short terminal phase of loss of appetite, loss of weight, and constant pain; and in the third group, a short history of colic with a coincident malignant phase of loss of weight, anorexia, and pain.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Syphilis in Elderly Persons. MacKee, Geo. M., M.D. Am. J. of Syphilis, Vol. XIII, No. 4, Oct., 1929.

Incidence of syphilis in the general population is variously estimated to be from 6.5 per cent (Symmers) to forty per cent (Warthin). Probably from seven to ten per cent is a conservative estimate. It is most frequently contracted in the second decade, the highest being tween the years of seventeen and thirty-one. The Wasserman is negative in thirteen per cent of tertiary and in thirty per cent of latent syphilis.

The mortality of this disease reaches its peak between the ages of fifty and fifty-four, being estimated at 24.7 per cent per 100,000 population.

Hazen states that 26,000 persons in the United States die of this disease annually. It is estimated that twenty per cent of inmates of insane asylums are syphilitic.

Syphilis in late life is more severe than in young adults. Incubation period is often prolonged. The eruptions are more stubborn and more likely to recur. The nervous system is also more frequently involved in older persons.

The treatment of syphilis in elderly persons is same as in the younger and he states that they tolerate treatment well.

He states that latent syphilis in the elderly, in the absence of serious activity, requires little treatment.

The prognosis of acive syphilis in the aged is not as good as in the younger subjects.

The prophylaxis of syphilis in aged lies in early diagnosis and adequate intelligent treatment in the young adults.

He states that syphilis is less malignant than in former years, and that there are fewer cases of serious late syphilis.

Cortical Abscess of the Kidney. Charles Pierre Mathe, M. D., A. M. A., Dec. 14, 1929.

In discussing cortical abscess, tuberculosis is not considered.

He describes an acute hematogenous type secondary to distant foci, furunculosis, due to the staphlococcus, and a second chronic or urogenous type resulting from urinary stasis and associated with pyonephrosis, which is usually due to B. Coli. Infection and trauma have long been recognized as predisposing factors in both types.

In the hematogenous type the organism usually lodges in the capillaries of the glomerulus, forming a circumscribed infection resulting in necrosis. This may end in a perinephritic abscess.

The urogenous type is often associated with urethral stricture, obstruction at the bladder neck, bladder stones, movable kidney, ureteral stone or kink.

The differential diagnosis of the hematogenous type from influenza and abdominal lesion is difficult. The history of previous furunculosis, etc., is of great importance.

In differentiation of cortical abscess from acute pyelonephritis, the urine is usually normal in former, but will show pus in latter.

Perinephritic absces usually causes no abnormality in the urine, but an x-ray will often show obliteration of the psoas muscle on the affected side, together with a curvature of the spine toward the affected side.

The treatment of the acute type demands immediate surgery, usually nephrectomy. Decapsulation, drainage of the abscess or resection of the diseased pole of kidney is occasionally indicated.

The urogenous type, if unilateral, also demands nephrectomy. If bilateral, more conservative methods are employed such as the removal of obstructions and drainage.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXII FEBRUARY, 1930 No. 2

SPINAL ANESTHESIA—ITS ADVANTAGES AND DISADVANTAGES*

J. L. McGEHEE, M.D., Memphis

SPINAL anesthesia has emerged from the dangerous period, in which it was considered necessary *merely* to inject a solution of a local anesthetic into the subdural space and then operate without further attention to the patient. The need for a very precise technique and for the constant supervision of the anaesthetized patient is now generally recognized. The physiological changes due to blocking of the spinal rami are now understood. Methods of localizing the blocks to designated segments of the spine have been developed. The control of the duration and intensity of the analgesia is possible. The importance of the point of injection, of dosage, of force and manner of injection, of bulk, of rapidity of diffusion, of specific gravity of solution used, and of preceding decompression of the dura have become evident. The careful selection of patients is all important; antidotal measures efficient to prevent circulatory failure and asphyxia have become standardized. These, and other details, to insure *safe* and *dependable* analgesia should be clearly understood by the surgeon who undertakes spinal anesthesia.

Spinal anesthesia offers to the operating surgeon the stimulus of a highly technical method directly under his control. He must assume the personal responsibility of its success and safety, or failure. With properly induced spinal anesthesia the operator finds the patient in ideal condition for the operation. There is complete freedom from pain or other sensation in the operative field; the tissues are absolutely relaxed, greatly facilitating operative manipulation; the intestines are contracted and do not protrude from the abdominal incision; the anal sphincters are open and the expulsion of flatus, or other content of the lower bowel, is strongly stimulated. Upon the parenchymatous cells of the body the effect of the few centigrams of drug used are inconspicuous. The brain, liver, kidneys and lungs are particularly free from toxic effects of the anesthetic.

In no other way can such profound and so extensive anesthesia be produced by so small a dose of a drug and so little general toxicity; and with the technical improvements now available, no other anesthetic of equal range leaves so few sequellae.

But spinal anesthesia has compensating disadvantages. It requires an accurate and very precise technique for uniform results. The lack of skill in its administration is more obvious than with the use of ether; ignorance or poor judgment in using the method, or lack of intelligent supervision during the period of analgesia, may cost the patient his life. A death under ether or chloroform or etherline may often be blamed upon the drug, but mortality with spinal anesthesia usually is to be blamed upon the surgeon. *Spinal anesthesia there-*

---

*Read before the Walnut Log Medical Society, October 16, 1929.

fore necessitates a degree of skill and a working knowledge of the physiologic action of the method. It is a very personal method, strongly appealing to the temperaments of many operators, but equally unadapted to others. It has a very wide field of usefulness and supreme advantages in certain operations, but it is to be absolutely excluded from a certain limited class of patients. Perhaps with no other anesthetic are the indications and contraindications more clearly evident.

To begin with, it is axiomatic that no one anesthetic is suitable in all cases requiring surgical therapy. The anesthetic agent and type of anesthesia employed should be made to conform to the patient's condition and the condition demanding surgery. It follows that the indications for the use of spinal anesthesia are determined by the surgical indications, by the site of operative intervention, by the age and debility of the patient, by the metabolic conditions of the patient (nephritis, diabetes), or by pulmonary and cardiac conditions (tuberculosis, bronchitis, etc.), where inhalation is contra-indicated. *Therefore the selection of the patient for spinal anesthesia is a most important question.* Spinal anesthesia is considered by many workers in this field the anesthetic of choice in many conditions. Of all forms or types of anesthesia it causes the least metabolic and protoplasmic disturbances. Primarily it does not lead to pulmonary complications, uremia, or gastro-intestinal complications. It is par excellence the anesthetic of choice in all surgical affections of the lower abdomen, including therein intestinal obstruction and peritonitis, in pathology of the vagina, perineum and rectum, and lower extremities.

The advantages of spinal anesthesia are many. It is an aid to better surgery, because the more complete relaxation accompanying its use permits wider exposure and less trauma. Fewer deaths result from this anesthesia and the dread of post-operative complications is lessened. As the skill of the surgeon increases in administering it, so will his appreciation of its advantages and adaptability grow.

Some of the outstanding advantages are:

BEFORE OPERATION

(1) Assurance and calmness on the part of patients, especially those fearing a temporary loss of consciousness.

(2) Fluids and foods may be given until the time of operation.

DURING THE OPERATION

(1) Consciousness of the patient during the performance of the operation. This permits closer observation of his general condition.

(2) The analgesia is more perfect and the relaxation more complete than with general anesthetics.

(3) Packs and pads will not be necessary, because of the complete relaxation of the intestinal tract, and hence the intestinal coils drop away from the site of operation. This permits the surgeon to operate more quickly, more easily and with less trauma.

AFTER OPERATION

(1) Post-operative shock is minimized, since the afferent nerves carrying painful impulses to the brain are blocked off.

(2) Since the minimal protoplasmic and metabolic disturbances are produced, there is the least danger of disturbing the equilibrium of the patient or precipitating the severe general reactions, which are always feared after deep ether anesthesia.

(3) The violent nausea and vomiting, the gastric and intestinal distention, and the various forms of muscular restlessness, which usually follow a general anesthetic, are absent.

(4) Although the intestines are stimulated, the anal sphincter is relaxed. This allows the patient to expell material that would later fill the colon and rectum, when intestinal movements are frequently delayed thirty-six or forty-eight hours after major operations. Therefore, we have a patient, who is able from the time of the operation, to take and hold fluids and soft foods.

DISADVANTAGES

(1) Spinal anesthesia is not an anesthesia of universal application. It has its

limitations and contraindications, which must always be carefully considered.

(2) Consciousness in certain patients, especially those in which sedatives are contraindicated, there may arise psychical impressions which are undesirable.

(3) There is a definite limit to the duration of spinal anesthesia and operating requiring time greater than this limit must be finished under general anesthesia.

(4) The severe, persistent headache, which sometimes follows the use of spinal anesthesia, although not dangerous, is very annoying to both the patient and the surgeon.

(5) The ocular palsies, though rare, are considered serious sequellae. They seldom occur in well conducted cases, and in all cases clear up spontaneously.

(6) The danger of meningeal infection or cord injury is omnipresent, but these are rare and unimportant when the pneumonias, emboli, pulmonary edema, acute gastric dilatation and the many other untoward effects of inhalation anesthesia are considered.

So to summarize:

Indications—Spinal anesthesia can be freely used for all surgery below the diaphragm with certain exceptions, which we will list under contraindications.

(1) Cases in which a general anesthetic is dangerous, i.e., the aged, the debilitated and those patients with heart, kidney, liver, lung and endocrine disease.

(2) Cases of high blood pressure are different problems for all anesthesias. They can be subjected to spinal anesthesia, if no definite cardiac weakness is present.

(3) Cases showing renal disfunction.

(4) Intestinal obstruction of all types.

(5) Purulent peritonitis.

(6) Any case with acute upper respiratory infection.

(7) All types of operative obstetrics.

Contraindications—These are definite and cannot be disregarded. It is essential that thorough histories be taken and complete physical examinations made before using spinal anesthesia, so that the contraindications may be determined and properly evaluated. These contraindications are:

(1) Any involvement of the cerebrospinal nervous system, such as brain tumor, cord tumor, intracranial or intraspinal hemorrhages, lues, meningitis, or any case with turbid spinal fluid is a positive contraindication.

(2) Any mechanical obstruction or limitation of the respiratory space, as pleural effusion or intrathoracic growths.

(3) Cases with hypotension, from any cause, are poor risks. No operation above the perineum should be done if the systolic pressure is below 100.

(4) Extremely depressed patients, in a state of shock (especially shock from hemorrhage).

(5) Septicaemia—the puncture would eliminate the barrier between the infected blood and the nerve centers.

(6) Patients with extreme myocardial degeneration.

(7) Suppuration at the site of puncture. As the chief aim of surgery has been to devise ways and means of lessening mortality and diminishing morbidity; the induction of anesthesia by any form or in any way, or with any drug requires careful consideration of the physical condition of the patient, and it should be the object of the surgeon to select the anesthetic that is best suited and most adaptable to the particular patient. Hence, the administration of an anesthetic is properly a selective matter and the responsibility in the final analysis rests on the surgeon.

Someone once asked Whistler how he mixed his pigments to obtain the wonderful colors of his canvas, and he replied "with brains." So the administration of any anesthesia must be done with brains.

BLOOD TRANSFUSION*

William Joseph Sheridan, M.D., Chattanooga

MANY surgical procedures experience periods of meritorious popularity and of vehement condemnation. The methods of transferring blood from one individual to another, or blood transfusion, have also traveled the "rocky road to Dublin." From the time of the first attempt, in a year which was made famous by the discovery of our country by Christopher Columbus (1492), when it is reported a transfusion of blood was given to Pope Innocent (1) after which he and three Jewish boys from whom blood was taken died, up to the year 1915 when Lewisohn (2) and Agote published their results, using sodium citrate as the means of preventing the blood from clotting, there were many major and minor difficulties which impeded the progress of the procedure. One of the most important discoveries which gave impetus to the universal adoption of blood transfusion was due to the research of Jansky and Moss (3) based on the finding of Shattock (4) and Landsteiner (5) that in specific instances the serum of one individual's blood coagulates the corpuscles of another individual's blood or the phenomenon known as iso-agglutination. Both the Jansky and Moss classifications are of the same inherent nature, although they differ to such an extent that it is of utmost importance to know which method is used so that possible error may be avoided. However, it would probably be best if one or the other of the classifications be adopted as a standard. The one attempt to restore order out of chaos has apparently failed. Until the results of the investigations of Jansky and Moss were published in the period between 1906 and 1910, one of the chief drawbacks had been the very serious reactions which often occurred either during or following transfusion. Numerous fatalities had been reported which were attributable to transfusion itself.

In passing, let us pause long enough to recall the credit due Sir William Harvey, who first proposed the circulation of the blood in 1616.

Indications and Contraindications

Exsanguination from any cause is the one absolute indication for blood transfusion. There are two essential known factors which are possessed by blood: first, it is the hemostatic agent par excellence; and secondly, it contains oxygen in an immediately available form to supply the tissue cells that have been suddenly deprived of this vital requirement. Among the more common causes of violent and serious hemorrhage may be mentioned accidental injury, ruptured ectopic pregnancy, ruptured uterus, melena neonatorum and umbilical hemorrhage, and hemorrhage from any mucous surface such as the gastric and intestinal types. Another large class of patients to whom transfusion is not only applicable but necessary is that group in which there is a great loss of blood by small continuous hemorrhage and where operative procedures may be indicated. I refer here particularly to submucous myomata of the uterus and retained secudines which so frequently cause such a condition. Due to the loss of blood together with a weakened vitality, operative procedures may seem almost contraindicated. It is almost universally agreed by surgeons that such a secondary anemia with a hemoglobin of forty or below and an erythrocyte count in the neighborhood of two and a half million shows improvement following transfusion, and often times operation would not be successful without it. Before, during and after many major operations where there is a considerable amount of shock to be combatted, and the loss of blood is considerable, transfusion if of value. "We have all seen the patient for whom everything possible has been done, who still does not properly convalesce after operation or other treatment. Too often, for unaccountable reasons, the situation is out of our control, but in some instances blood transfusion will work the miracle to keep the patient alive long enough to mobilize his defenses and recover." (6) I shall later illustrate this point by a case report.

---

*Read before the Chattanooga and Hamilton County Medical Society, October 24, 1929.

There remains a wide variety of conditions in which transfusion is still in the experimental stage. Not until more data has accumulated will we know the value of transfusion in such conditions as erysipelas, the blood dyscrasias, especially primary or progressive anemia, purpura, hemophilia, severe burns, surgical shock, acute, subacute and chronic infections, uremia, drug and chemical poisoning, especially carbon monoxide poisoning where there is a replacement of oxygen in the red blood cells by the gas molecule.

Among the conditions in which blood transfusion is contraindicated are many bacillary infections, pneumonia, typhoid (except for hemorrhage), tuberculosis of the lungs, and infectious diseases of childhood. Patients with marked hyperpiesis, or advanced cardiac lesions are not only bad subjects for transfusion but are positively dangerous. Especially in severe burns and acute sepsis many authorities warn us of the serious pitfalls which may be encountered.

REACTIONS

Reactions are of two types, haemolytic and anaphylactic. (7) The haemolytic type develops immediately and clinically is marked by vomiting, icterus, hemoglobinuria, bloody stools, bloody emesis. Here there is a diminution of platelets, a reduction of erythrocytes, a reduction of lymphocytes, an increased bleeding time, and a lengthening of coagulation time.

The anaphylactic or protein type of reaction develops more slowly. No hemolysis occurs here; no change in the number of erythrocytes and leukocytes, and the coagulation time is shortened. Symptoms usually become manifest four or five hours after transfusion, and are most frequently ushered in by a chill, temperature in the neighborhood of 104 degrees, rapid pulse, but with no respiratory change. The fever lasts from three to four days usually, but regardless of the reaction, the patient is usually benefited by the transfusion. The greatest danger lies in damage to the heart, kidneys, and liver. Death from renal complications has been reported.

If at any time during transfusion a sudden change is noticed in the patient an immediate halt is indicated. Not until investigation proves that we have not overstepped the danger line, should we go ahead with the transfusion. At all times we should be on the alert for cyanosis, sudden chill, restlessness, sense of suffocation or oppression, persistent cough, sense of extreme heart, or sudden rise of blood pressure. Sharp, severe pain in the arm of the recipient may be interpreted as infiltration of the tissues of the arm by the donor's blood and this is overcome by properly reinserting the needle into the vein. Air embolism, while possible with poor technique, rarely occurs. Likewise, over elevation of the blood pressure and acute cardiac failure are possible but unusual.

For reactions of the types described above, institute the following treatment:

15-30 drops 1:1000 adrenalin in aq. oz1 intravenously.
Heat
Morphine

Brines (9) in reporting a series of 2500 transfusions done under his supervision claims that only three had severe reaction following transfusion with unmodified blood. Of these three, only one died. He reports six cases in this series which by mistake were given incompatible blood. All had reactions and one died, although he says that this latter case was moribund at the beginning of the transfusion and that the reaction only gave impetus to the fatal outcome. He further states that he never saw a case of embolism and has been unable to find an authentic report of its occurrence following transfusion. Further, he states he never saw a person have his grouping changed by transfusion or otherwise. He is of the opinion that change of blood grouping is due to faulty technique in the laboratory, or to the use of old stock serums which have deteriorated.

METHODS

1. Modified
2. Unmodified: (a) Direct (vessel to vessel type); (b) Indirect.

DISCUSSION

(a) Modified blood is the term applied to blood to which some chemical substance has been added to prevent the clotting of the blood in the interval between the obtaining the blood from the individual giving the blood (termed the "Donor"), and the injection of the blood to the individual who is to receive the blood (termed the "Recipient"). Various chemical substances for preventing clotting of the blood have been found, such as sodium phosphate, sodium bicarbonate, Hirudin, sodium iodide, and sodium citrate. Due to toxic and other adverse properties exhibited by many of these in amounts large enough to prevent clotting, the field has narrowed down to the almost universal adoption of sodium citrate, as prepared by Lewisohn in 1914 (2), which not only will prevent clotting in a dilution of 0.2%-0.25%, but also causes practically no adverse reaction. The citrates method is very simple. In the main it consists of withdrawing an amount of blood (usually not exceeding 500 c.c.) from a donor whose blood has been previously found by very careful and exacting methods to be suitable for the recipient. As this blood is withdrawn into a suitable container it is agitated with a stirring rod, and the sodium citrate solution added gradually, 10 c.c. of two per cent sodium citrate solution being added to every ninety c.c. of blood. The blood having been obtained, it is filtered through several thicknesses of gauze to remove any clots which may have formed and is injected into suitable vein of the recipient by gravity in much the same manner that Salvarsan is given. It is imperative that strict surgical asepsis should be observed throughout the whole procedure, as carelessness might result in a blood stream infection. Let me further stress, that all glassware be boiled in clean water to which no chemicals have been added, and that they be rinsed thoroughly with sterile distilled water. Only old rubber tubing which has withstood repeated boilings should be used, because new rubber contains water-soluble chemicals which might be provocative of reactions of an undesirable character. Helpful suggestions are to rinse all containers, the gauze in the filter, and all rubber tubing and cannulae with a two per cent solution of sodium citrate to aid in the prevention of coagulation. Another helpful suggestion is moving along without unnecessary delay because it has been found that cooling of the blood seems to cause unpleasant reactions.

Sodium sulphate has recently been found to be apparently equally efficatious and less toxic than sodium citrate, but at present the merits have not been sufficiently demonstrated to warrant its universal substitution for citrate. The Hoffman-Habein (8) and Brines Methods (9) are but modifications of this technique.

Another method which might be mentioned at this time is one that is used by Siperstein and Sansby (10) wherein citrated blood is given intraperitoneally in infants. In infants the chief difficulty lies in the small size of the veins which makes venipuncture very difficult, and therefore, the intraperitoneal method is to be preferred. They report a series of fifty cases without any untoward reaction or injury to the abdominal contents. Cole and Montgomery (11) report similar favorable results on 237 cases. I have not had the opportunity to give this procedure a trial.

(2) Unmodified.

(a) Direct—This procedure was introduced by Murphy in 1897, and consists of an end-to-end anastomosis of vessels of the donor and recipient. Later Crile modified this method by using a cannula to connect the vessels. Modification of the Murphy method is practiced by J. S. Horsley (12). This method has many adverse features such as great difficulty in perfection of technique, excess surgical skill, and inaccuracy of the amount of blood transferred. Altogether, in view of the good results obtainable by various other methods which are simple enough to be practiced by the physician of average training and ability, I am of the opinion that this procedure will be of interest only historically.

(b) Indirect—For several reasons I believe that this method surpasses the others outlined above, in the majority of cases, at least. By this method whole blood to which nothing has been added is transferred from the donor to the recipient without the addition of any chemicals whatsoever. The bugbear of the procedure is the rapidity with which the blood coagulates. This, however, can be overcome with familiarity with the technique, which is not difficult to develop.

I have been using for some time, the apparatus devised by Scannell. This consists of glass syringes of the usual type, cannulae of various sizes, rubber connections, and most important of all a three-way stopcock, by means of which a system is connected up consisting of the donor, the recipient, and a basin of sterile saline solution. This valve is of very simple design and is under perfect control at all times. By simply turning the valve after the system is once established we are able to withdraw or inject blood or saline to any of the connections that have been made. That is, blood withdrawn from the donor can be injected to the recipient, saline can be given to the recipient or donor, the system can be rinsed out with saline at any time to remove any clots which may have formed. Due to this three-way valve all this is possible without stopping to detach any part of the apparatus. Also, the blood from the donor may be withdrawn in small but known amounts and administered at once to the recipient without any contamination with the air, and in such a rapid manner that very little of its heat is lost in the process. I have found that twenty c. c. is the amount which should be withdrawn and injected with each stroke of the piston of the syringe to get the most rapid and least complicated transfusion of blood. It is advisable to rinse the syringe thoroughly with saline every third or fourth time it is emptied. This goes a long way to prevent sticking of the piston. If the piston feels like it is going to stick anyway, replace it immediately with another syringe which should be ready in case of eventualities. My results with this method have been very satisfactory and for those of you who have not tried it, there is a pleasant surprise in store for you. The average time for transfusion from start to finish averages from fifteen to twenty minutes, and a great deal of that time is consumed in watching the patient for signs of any untoward reaction. Although I have never had any adverse reactions following transfusion by this method, such a possibility should not be forgotten, and if we keep close watch on the pulse, respiration, etc., we would be able to stop the transfusion at the time of the manifestation of untoward symptoms.

The Klimpton Brown Paraffin Container method (8) utilizes unmodified blood but preparation of the apparatus is difficult and failure results in having to discard blood already withdrawn from the donor.

The Lindeman Multiple Syringe method (13) requires too many assistants and is fast becoming obsolete.

The Unger Syringe (8) method is excellent but has the disadvantage of cooling of the blood and lacks the added features of the Scannell three-way stopcock.

Whenever the subject of blood transfusion is mentioned, there is always brought up a discussion as to the relative merits of modified and unmodified blood in transfusion. Quite a voluminous amount of literature has accumulated along this line. However, in my opinion this is more or less of academic nature. That both are beneficial is beyond question. Our patients are more interested in their recovery than in our arguments. While I, personally, favor the unmodified method in the majority of cases, still I know that the citrate method is not without its good points, e.g. in infants and small children, in institutions where more elaborate apparatus is not available, and perhaps in the hands of one whose experience in blood transfusion is limited. It behooves anyone doing transfusions to be familiar with both methods, because each is applicable in its sphere.

CASE REPORT

C. H. Admitted to the hospital 9-30-25.

Male, white, age 18, farm hand, unmarried.

Chief Complaint—Painful swelling located over upper anterior part of right chest. High fever, delirium.

Present Illness—Patient first noticed painful swelling over upper anterior part of chest August 31, 1925. Went to work and worked all day and until the forenoon the day following when he had to quit because of pain in the region above mentioned. He also experienced pain on movement of the right arm. Also felt hot and drowsy and feverish. These symptoms were not associated by nausea, vomiting, chills or epistaxis. He does not remember more about his present illness because he says that he became delirious shortly thereafter.

Past History—

Pneumonia 1917 with good recovery.

Influenza 1922 with good recovery.

None of the usual exanthemata associated with childhood.

Otherwise negative.

Family History—

Irrelevant.

Habits—

Smokes cigarettes in abundance. Uses alcohol occasionally.

Denies venereal diseases.

Physical Examination—

Young adult male, white, in bed, appears acutely ill. Mentally clear at this time. Fatigues easily during examination, frequently dropping off to sleep. Multiple herpes of the lips. Aphthous ulceration of the tongue. Fauces negative.

There is an area the size of the palm over the right clavicle at junction of mid and inner 1/3, which is very tender and shows the usual signs of an acute inflammation. There is no abrasion over this area, and no evidence of previous furuncle. The border of the area shade off gradually into the surrounding skin. The whole area is brawny and indurated and no evidence of fluctuation can be made out.

Lungs—Essentially negative.

Heart—Moderate enlargement, systolic murmurs at all orifices. Sounds clicking and weak. Rate 120.

Pulse—Rate 120, weak, and of small volume. Temp. 104, Resp. 28.

Abdomen—G. U., and extremities negative.

Blood—WBC 13,600, polys 90%, lymphocytes 9%.

Urine—Slight trace of albumen, otherwise negative.

X-ray—No radiographic evidence of involvement of the clavical.

The area over the junction of the middle and inner one-third of the clavicle suggests either an acute osteomyelitis of the clavicle or a streptococcus infection of the tissues overlying the clavicle. If the latter, there is no abrasion, furuncle, or other evidence of the portal of entry of the infection. Also one might possibly think of a metastatic origin of the infection from a possible endocarditis, which is likely from the findings in the heart. However, it is entirely possible that the findings in the heart are secondary to the infection in the clavicle.

We were wont to lean towards the diagnosis of osteomyelitis. On September 30, 1925, an incision one and one-half inches long was made over the inflamed area over the clavicle, under gas anaesthesia. The periostium was closely adherent to the bone. The drainage was seropurulent in character (mostly serous) and the wound was packed with gauze.

Three days later the patient developed a similar condition in the region of the left ankle, most pronounced over the region of the internal malleolus. Rentgenograms showed a clouding of the joint of the ankle as well as the tarsal joints. This time we decided to treat the condition symptomatically with hot boric dressings. Five days later the region of the ankle was very much swollen and fluctuation was apparent and incision, drainage and packing was resorted to. Following this a similar process developed in the upper arm and similar course and similar procedures were duplicated.

Progress following these procedures was all that could *not* be wished for. The incised areas exuded abundant pus with necrotic tissue in abundance in these areas. The pain at all times was excruciating, the temperature ran the usual fluctuating course as is seen in acute infections of this nature. And all the while the physical condition of the patient was rapidly going down hill, as was evidenced by a rapid loss of weight, severe secondary anemia, and marked weakness. A fatal termination seemed inevitable. The patient seemed to have lost the resistance to withstand the infection.

The following is a resume of the laboratory work that was done:

X-ray of chest showed enlargement of left side of heart and moderate perbronchial infiltration of the lungs.

Blood culture negative. Wasserman negative. Widal negative.

Urine repeatedly negative, except for a slight trace of albumin.

On November 3, the patient was accidentally discovered almost exsanguinated following a massive hemorrhage from the sloughing area of the left foot. This was controlled by packing, as any attempt at suture in this sloughing and infected area was worse than useless. 500 c. c. of normal saline was given intravenously and another 500 c. c. subcutaneously, after which the patient showed general improvement from the loss of blood. Eighteen hours later another hemorrhage occurred from this area but this time we were on the "qui vive" and the loss of blood was not as great as previously. At this time the patient was almost in extremis as a result of the long standing infection together with the great loss of blood. Blood examination at this time showed Hb 28%, RBC 1,800,000, WBC 12,200, poly 80%, lymphocytes 12%, transitionals 2%. What to do in this case was apparent. Blood typing and cross agglutination of several would-be donors showed that his sister was the only compatible donor. 500 c. c. of unmodified blood was given the patient with the Scannell apparatus using the sister as donor. The severe anemia was noticeably partially relieved at the close of the transfusion. The patient did not have have any reaction of an adverse character following the transfusion. On November 6, which was the second day following the transfusion, examination of the blood showed Hb 35%, RBC 2,150,000, color index 0.83. Three days following the transfusion the wounds began to have a healthy appearance and granulation were in abundance. All packing was dispensed with at this time, and in the space of ten days all wounds were healed. Discharge from the hospital was effected as soon as the general physical condition would permit. Three months later a general check-up on the patient showed him to be in excellent physical condition and he had returned to work. There was no evidence of any damage to the heart and no murmurs, nor enlargement. I am still at loss to make a definite diagnosis in this case, although due to no bone destruction I do not believe it was osteomyelitis. Be that as it may, I am of the opinion that blood transfusion not only tided him over the critical period but caused his recovery, acting both as a hemostatic to check the hemorrhage, and also furnishing a stimulus to overcome infection.

Adequate transfusion represents merely a part of good treatment; if in doubt, transfuse rather than wait. Transfusions are beset with danger and must be seriously considered.

CONCLUSION

1. Blood transfusion should be considered more often as a method of good treatment.

2. Blood transfusion is not a panacea; it has indications and contraindications.

3. The types of adverse reactions are fairly well marked, and careful selection of donors eliminates wholesale reactions.

4. Blood transfusion, when indicated, is beneficial regardless of the method of administration. However, the present trend is towards giving unmodified blood by the syringe method.

5. Laboratories are not always available and it behooves anyone who performs transfusion to be familiar with the technique of blood typing and cross-agglutination.

BIBLIOGRAPHY

1. Villari's Life of Savonarola, as quoted by Crile, "Hemorrhage and Transfusion," 1909. Appleton and Co., N. Y.
2. Lewisohn, Richard. Medical Record, January 23, 1915.
3. Moss, W. L. Bulletin, Johns Hopkins Hospital, 1910, XXI, 63.
4. Shattock. Journal Pathology and Bact., 1900, VI, 303.
5. Brines, O. A. Archives of Surgery, May, 1828.
6. Kirk, W. W. Journal Florida Medical Association, 1928.
7. Wallace, Frank L. Kentucky Med. Journal, 1928.
8. Herr, E. A. Surgery, Gny., and Obs., 1925, XLI, 513.
9. Brines, O. A. Archives of Surg., January, 1926.
10. Sansby, J. M. and Siperstein, D. M. J. A. M. A., June 16, 1923.
11. Cole and Montgomery. Am. Journal Dis. of Children, May, 1929.
12. Horseley, J. S., Vaughn, W. T., and Dodson, A. I. Archives of Surgery, 1922, V, 301.
13. Quoted by C. G. Guthrie and J. G. Hicks. Bulletin J. Hopkins Feb., Mar., and April, 1923.

BOSTON
JUN 3 1948
MEDICAL LIBRARY

MAKE YOUR PLANS TO ATTEND

The Centennial Celebration

OF THE

Tennessee State Medical Association

NASHVILLE

April 8-9-10

CONVENTION HEADQUARTERS

Hotel Hermitage

Write for Your Reservations Now!

TREATMENT OF GENERAL PARALYSIS*

(With Special Reference to Malaria Treatment)

H. B. BRACKIN, M.D., Central State Hospital, Nashville

NEUROSYPHILIS is divided into two classes, interstitial and parenchymatous. The interstitial group included lesions formerly classed under cerebral, spinal and cerebro-spinal syphilis. Parenchymatous consists of tabes and general paralysis.

In the treatment of neurosyphilis best results are obtained in the interstitial type, as it is less malignant. I will now consider treatment of general paralysis of parenchymatous type, which until recently had been considered not amenable to treatment on account of the great destruction of nerve tissue.

Treatment of general paralysis is divided into the specific and non-specific modes. The specific consists in the use of neoarsphenamine, sulpharsphenamine, tryparsamide, mercury, etc. Very poor results have been obtained by any of these drugs except tryparsamide, in the treatment of general paralysis. Tryparsamide is a new arsenical preparation introduced in 1923 by Brown & Pearce of the Rockefeller Institute. It is less toxic, more penetrable, and has less spirocheticidal power than the other arsenical preparations. Best results reported by the use of tryparsamide were by Lorenz in the original report in 1923. Bunker, in January issue of American Journal of Psychiatry, summarizes 542 cases treated by various workers with tryparsamide with 35.2 per cent remissions. Many of these cases were non-institutional cases, which should not be compared with those that have been for months, or years, in a hospital for the insane. This shows though that tryparsamide is of definite value in early cases of general paralysis. Clinical improvement usually outstrips the serologic improvement. Usually about thirty doses of tryparsamide will give the full clinical effect, while it takes seventy-five to one hundred doses to get the serological improvement. One of the drawbacks to the use of tryparsamide is that it often damages the optic nerve, causing partial or complete blindness. The eye ground should be observed frequently by an opthalmologist. According to reports in literature, as well as my own observation, the treatment of general paralysis by arsenicals other than tryparsamide has been practically nil. Furman reported in 1923 a series of five hundred cases treated at Manhattan State Hospital, Wards Island, N. Y., with neoarsphenamine, mercury and spinal drainage. While physical improvement was noted in a number of cases, the number of true remissions was found to be very little above what Raynor found to occur spontaneously in hospitalized cases of general paralysis without any treatment. He found 3.5 per cent of 1,000 cases showed spontaneous complete remissions.

The non-specific mode of treatment consists of injections of various foreign proteins, as well as the use of various fever producing agents and induced infections. As far back as 1887, Wagner Von Jauregg had noted improvement in cases of general paralysis following an attack of some infection or febrile disease—as typhoid, pneumonia, or even localized abscess. He began to study the effect of vaccine and various albuminous substances and finally innoculation with some infectious disease. In 1917 he became convinced that tertian malaria innoculations was the most effective treatment. His work was taken up in other European clinics and in the United States about six years ago.

The non-specific method differs in principle from the specific. The specific attempts to kill the spirochetes by a specific remedy, as neo-arsphenamine. The non-specific attempts to stimulate the immunity mechanism with the object of inhibiting the activity of the spirochete. The method seems capable of calling the forces for its own defense, which the injected organism possesses but which would ordinarily lie dormant. It appears that protoplasm activation is chiefly localized in the central nervous system when malaria is used. It has been thought by some that the good effects obtained by malaria were due to the high fever, but this has not been proven. It is possible that it is due to the fever and that the fever comes in paroxysms, which make it more beneficial than if it were continuous. Malaria acts on a similar basis to protein shock, but, for some unknown reason, better than any protein.

---

*Read before the Davidson County Society and the Nashville Academy of Medicine, Nashville, April 23, 1929.

A number of favorable reports have accumulated in literature in the last few years, on the treatment of general paralysis by innoculation with malaria. The writer began one year ago at Central State Hospital, Nashville, Tenn., a series of treatments of general paralysis cases by innoculation with tertian malaria. There were twenty-two white men in this series. All the patients in the hospital at that time that had general paralysis were treated, except a few patients that were bedfast, and in the very last stages. Many of those treated were in a deteriorated state but treatment was given anyway to see if they could be benefitted.

There are not many contraindications to the treatment with malaria. It is not advisable to treat those in the last stages or those suffering with serious heart trouble, nephritis or pulmonary conditions. Most all of these cases were of long standing, as they usually are before they reach a hospital for the insane. They had been to specialists, private sanitariums, etc., and considered hopeless by all, hence, they were sent to the hospital for the insane. Then they had been in the hospital from a few months to five years, and during that time, of course, the destruction of nerve tissue was still going on. All of them had received specific treatment—every type of specific treatment had been given and some had received almost innumerable courses. One reported thirty-two Swift Ellis treatments, in addition to other treatments, before entering the hospital, and all had received specific treatment in the hospital and none had shown a remission.

You are all probably familiar with the method of innoculation, and I will merely mention that it is best to be sure the donor has the tertian type of malaria, and inject intravenously four c. c. of citrated blood. It may be given subcutaneously or intravenously, but the incubation period, subcutaneously, is much longer than intravenously, and, I have found the intravenous route much surer of giving the patient malaria. Some authorities give only two c.c. intravenously, but, I have found four c.c. better. I used two per cent solution of sodium citrate, mixing one part of citrate solution to ten of blood. After the innoculation, the recipient will have a chill, in from four to fourteen days. The majority of this group had the first chill on the fifth day. They were allowed to have from ten to twelve chills, with a rise of fever. There was but little regularity about the day they would have a chill. But few had the typical tertian, every other day, while some had chills every fourth or fifth day, the rise of temperature following the chill ranging from 103 to 106 2/5. After the desired number of chills, they were stopped with quinine. I treated them much like the standard malarial treatment, giving ten grains of quinine three times a day until chills were controlled, and then ten grains each night for six or eight weeks. Many authorities treat them only three or four weeks with quinine, but I desired to be sure they were free of malaria, however, it is much easier to control artificial malaria than malaria transmitted by mosquitoes. Quite a few of these patients stopped, automatically, having chills without having as many as I desired. These were innoculated again. Some had more chills from the second innoculation, while some did not. Those that stopped automatically apparently had some immunity to malaria.

At the same time some cases of dementia praecox were being treated by the same method and the same strain of malaria, and, it was interesting to note that none of them stopped automatically or showed any immunity to malaria. This observation seemed to show that general paralytic patients have more immunity to malaria than dementia praecox patients, or patients that do not have syphilis. I do not pretend to explain it, and, do not know whether anyone else has observed it or not. During the same period three negro men with general paralysis were injected with the same strain of malaria, but, showed no reaction, so they were given a second innoculation—this time they were given 5 c. c. of malarial blood, and still they showed no reaction. So apparently the negro paretic has almost complete immunity to malaria. Kirby observed sometime back that it was difficult to innoculate negroes.

In this group of twenty-two patients seven have had complete clinical remissions. They cleared up mentally—all of their delusions and hallucinations disappeared and they apparently returned to their former normal mental condition. They all gained weight and improved physically. Six of the seven obtained negative blood and spinal fluid Wassermans. Their neurological findings did not clear up, but improved—speech defect improved possibly the most, but some improvement was noted in their reflexes. Three of the seven that had remissions were of the manic or hyperactive type, one of the depressed, one of the expansive, and two of the simple type. The most of them have returned to their former occupations—some of the number having responsible positions, one being a registered pharmacist and one a city fireman.

Five patients have been greatly improved, both mentally and physically, and, apparently still improving, and it is possible that some of the five may attain a complete remission. Two of these five were the last treated, in the group; three of the five greatly improved were of the expansive type, one of the depressed and one of the manic. Two of the five now have negative Wasserman reactions, of both blood and spinal fluid. All of the five are much stronger physically and all are doing work of some kind at the hospjtal, while none of them were able to do anything before their treatment. Five of the group treated have shown slight improvement mentally—they are less trouble to care for than before and are in a better physical condition. Of the five that have shown slight improvement three are of the simple type, one of the depressed and one of the manic. One of the five has shown a negative Wasserman of blood and spinal fluid. His mental condition has not improved in comparison to his serological. Four patients showed no improvement mentally, but, one of the four obtained a negative Wasserman of blood and spinal fluid. He had been in the hospital four years and had not spoken in three years—and but few times the first year. Of the four who showed no improvement two are of the simple type, and two of the depressed.

One patient died in a short time after treatment was finished. He had a mild heart effection before the malaria was given, and the malaria made it worse and hastened his daeth. This was the only death during the year. One out of twenty-two would be a death rate of 4.5 per cent—the average annual death rate of general paralysis, not treated, in New York State is thirty per cent, so it has apparently lowered the death rate. With the exception of the one death, no trouble was directly traceable to malaria except one patient developed a hemiglobinuria and appeared critically ill for a few days, but recovered. He was an old resident of the hospital, and was in a deteriorated state. His physical condition was poor and he was very anaemic. He is slightly improved mentally, and much improved physically at present.

One of the objections that has been made to the malaria treatment has been that malaria might be spread by mosquitoes from the patient under treatment to other persons, and in that way get it spread throughout the community. There is not a great likelihood of this because it has been proven that in artificial malaria the gametocytes disappear from the blood after the first few passages of blood from person to person. In other words, the parasite does not have the opportunity to complete the sexual phase of the life cycle and since the mosquito phase has been left out, the parasite can only reproduce in the human in nonsexual form. It has been proven by Brazelai-Vivaldi who carried out a carefully controlled experiment, that the absence of the gametocytes in the blood makes the transmission by mosquitoes impossible. Since this experiment it has been considered safe to carry out the malaria treatment in localities where the Anopholes mosquitoes are present. The writer thinks though you should screen the patient against mosquitoes.

CONCLUSIONS

It is natural to be skeptical about results obtained with a new remedy in a disease which has been considered incurable. We know no remedy in the past has been of much benefit except tryparsamide, which is also new and which I do not believe equals malaria in results with the far advanced insane, and it carries a great danger of damage to the optic nerve.

According to available statistics about 27.5 per cent of all cases of general paralysis treated with malaria have been complete remissions. This covers about 2,500 cases. Many of them have been followed for several years, and are still working at their former occupations. About twenty-five per cent are improved greatly, and some of these are able to stay out of the hospital, but not to work. This makes at least 52.5 per cent greatly benefitted, out of 2,500 cases. In England thirty-six per cent show complete clinical remissions, and thirty-six per cent considerable improvement, which means possibly they are diagnosed earlier than here. The writer does not know the percentage of remissions Wagner has shown, considering all he has treated, but he has three of the original eight treated ten years ago still in a state of remission, and eight complete remissions and three partials, out of twenty-five treated eight years ago.

In the series being reported there were seven remissions out of twenty-two—a percentage of 31.5 per cent and five greatly improved—a percentage of twenty-three per cent. This would make about fifty-four per cent greatly benefitted, or about the same as shown by several others in this country.

The writer feels that in the future general paralysis may be treated much more successfully than in the past. Of course, I do not believe that a deteriorated patient can be restored to normal, but if the cases are diagnosed earlier then there is a better future for them. It is now known that the nervous system is often invaded during the early stages of systemic syphilis, and a neurological examination and a spinal fluid should be made then. This will help to diagnose it earlier and, therefore, make the percentage of arrests or cures larger.

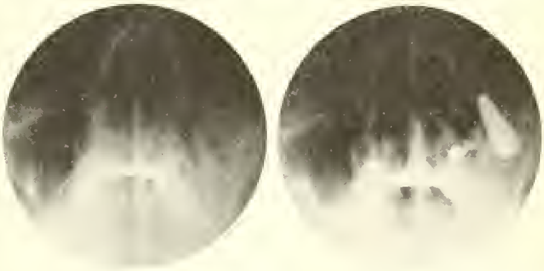
LIPIODOL IN CHRONIC MAXILLARY SINUS DISEASE. STUDY OF ONE HUNDRED CASES WITH LANTERN SLIDES*

W. J. Greenfield, M.D., The Polyclinic, Memphis

THE instillation of lipiodol into the maxillary nasal sinuses has been helpful in the accurate diagnosis of maxillary sinus disease. It has been used more or less routinely for the past two years at The Polyclinic in those sinuses that were very cloudy on x-ray examination. It enables us to visualize the pathology present in the antrum cavity. We were as often surprised to find more pathology as well as less pathology than the usual other routine examinations had led us to believe was present. At times polypi and other growths reported present by x-ray examination could not be found following the filling of the antrum with lipiodol. In some cases a cloudy roentgenogram was the only evidence we had of maxillary sinus pathology. In these cases lipiodol was used to further substantiate and clarify the diagnosis made by the x-ray. Cloudy maxillary sinus x-rays usually indicate pathology present of some sort but not necessarily always so. Lipiodol or some other radio-opaque substance placed in the antrum is the only other means we have of further substantiating or altering the diagnosis previously made by roentgenogram.

Lipiodol was first used by Forestier and Sicard in France in 1921. It is a thick, oily medium composed of forty per cent iodine in poppy seed oil. The iodine is firmly linked to the oil molecule and is consequently not liberated very rapidly in the body at least sufficient to be toxic even if several cubic centimeters are swallowed by the patient. It is a definite chemical compound in which the halogen cannot be detected by ordinary reagents. Both maxillary sinuses may be filled with lipiodol and left in place to be gradually removed by the normal action of the cilia of the nasal mucosa without any toxic or harmful effects, as far as our series of cases is concerned.

MacCready in a paper read about three years ago reported two cases where the diagnosis was substantiated by filling the antra with iodopin. This solution is forty per cent iodine in sesame oil made by Merk & Co. The first case he reported had a marked generalized thickening of the maxillary sinus mucosa and the other was an extra-sinus dental cyst springing from the floor of the maxillary sinus. He emphasized the value of the radio-opaque substance in the diagnosis of these cases. Jones reports similar results from the use of iodized oil. Several other articles have been written regarding the use of iodized oils in the diagnosis of other para-nasal sinuses such as the frontals, ethmoids and sphenoids. The displacement method so ably advocated by Proetz has been unsatisfactory in many cases of sphenoid and maxillary sinusitis. The ostia were frequently obstructed by endematous hyperplastic tissue changes and the results were uncertain.



Mrs. W. A. S. X-ray shows an absent or small left antrum. Lipiodol instillation reveals a small antrum with no mucous membrane hyperplasia.

To do away with all uncertainty in filling these sinuses with a radio-opaque substance, the needle puncture method is used. The amount injected can be definitely measured and there can be no doubt about the substance being injected into the diseased cavity. The puncture is always made into the dependent portion of the sinus through the nasal wall using a fourteen gauge straight hollow needle for antrum work and an eighteen gauge needle for sphenoid work. Isotonic salt solution is instilled into the cavity and when filled it is withdrawn and sent to the laboratory where a differential white cell count is made if there is any doubt about the presence of pathology. Immediately before the needle is withdrawn the sinus cavity is filled with lipiodol through this same needle, using a ten c. c. Luer glass syringe. The maxillary sinuses normally require from six to eight c. c. and the sphenoid sinuses normally require from three to five c. c.

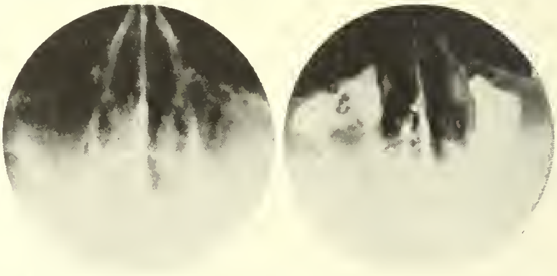
---

*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Jackson, April 8, 1929.

The advantages of lipiodol compared to thinner fluids are due to its increased viscosity. It remains in the antrum in all cases sufficiently long enough to obtain a perfect x-ray picture even though the patient has been compelled to wait a period of time and even though the natural opening is large. We have tried other radio-opaque substances but none have been as satisfactory as lipiodol. We have found no disadvantages thus far except its cost. In no case have we produced toxic symptoms when the oil is left in the sinuses to be removed gradually by the natural mechanism. This is likewise true in children when oil is placed in the maxillary sinuses under ether or local anaesthesia. We have recently attempted the use of an equal mixture of lipiodol and liquid petrolatum. It was not satisfactory because the specific gravity of this mixture is less than water. Consequently it does not displace our irrigating fluids in the antrum and may lead to false pictures.

One hundred cases will be analyzed in the following report and represent some of the maxillary sinuses injected during the past two years at The Polyclinic. Let me emphasize that we have not filled all the maxillary sinuses routinely with lipiodol. Only those sinuses that are cloudy three—four on a basis of four and those sinuses that do not get well by conservative treatment are filled with lipiodol to further verify and complete our diagnosis; it also helps us determine what type of operation will permanently relieve the patient of his symptoms.

There were thirty-four females and sixty-six males. The oldest female was seventy-six years of age and the oldest male was seventy-four. The average female age was thirty-six and the average male was forty years of age. The youngest female was fourteen and the youngest male for fourteen years of age. This year (1929) we are beginning to use this method more and more in the diagnosis of chronic maxillary sinusitis in children. It is readily performed under local anaesthesia.



Mrs. E. W. W. X-ray shows right antrum cloudy 2; left antrum cloudy 3. Lipiodol instillation reveals a large polyp on floor and wall of right antrum and generalized hyperplasia 3 with polypi 2 in left antrum.

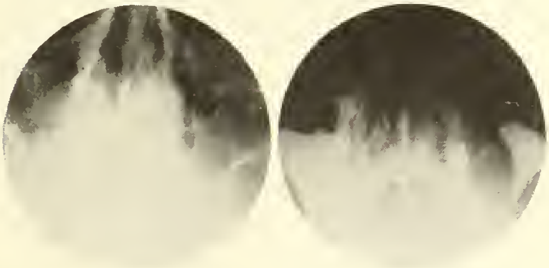
The chief complaint of most of these cases is interesting since only twenty-four had complaints referable to their nasal sinuses. Other complaints such as cough, stomach trouble, backache and general headaches all occur as the dominant complaint in the larger number of this group.

CHIEF COMPLAINT

Nose	24
Cough	9
Stomach	11
Backache	6
Headaches	6
General aches	10
Asthma	5
Fever	2
General weakness	11
Loss of weight	2
Enlarged thyroid	1
Itching hands	1

General examination	2
Diabetes	1
Blindness	1
Varicose veins	1

Headaches as the chief complaint rank second in number to the group with nasal symptoms numbering sixteen. The third place has two groups numbering eleven, one of which came to the clinic because of stomach disturbance and the other group for general weakness. General aches and pains come fourth with ten and the group with cough comes sixth with nine per cent. Six per cent of all cases had backache and five per cent had asthma. This is interesting as it indicates that severe sinus changes are not so prevalent in asthma, particularly since we've had a large asthma group of patients which have all had a routine nose and throat examination.



V. B. X-ray shows right antrum cloudy 2 with polypi 2 and left antrum cloudy 1. Lipiodol instillation reveals hyperplasia 2 plus polypi 1 in right antrum and polypi 3 in left antrum.

The duration of the chief complaint continued all the way from two weeks to forty years. No particular information could be gained from analyzing this phase of the subject so that it will not be further considered.

The duration of the nasal symptoms likewise was so varied and indefinite that it will not be dwelt on. It varied from two weeks to fifty-five years.

The nose findings are interesting and will be charted for comparison.

NASAL FINDINGS

Nose negative (no definite signs of supp.)	13
Septal deflection with obstruction only	22
Edema and pus in middle meatus	21
Edema in middle meatus	12
Polyps present	8
Secretion on floor only	4
Previous operation on upper sinuses	6
Atrophy and pus	5
Polyps and pus (or crusts)	2
Hypertrophic rhinitis	4
Atrophy without pus	2
Pus in choana	1
Edema in choana	1
Turbinectomy	1

The nose was clinically normal in thirteen per cent of the cases. By clinically normal we mean that there was no evidence of edema or secretion in the middle meati or inside the choanae by indirect inspection with the nasophrayngeal mirror, nor was there any undue nasal septal obstruction or undue congestion of the nasal mucosa in general. In twenty-two cases there existed only considerable nasal septal deviation producing marked ventilation disturbances. In twenty-one per cent of the cases edema and purulent secretion were found in some portion of the middle meatus on the involved side. In twelve per cent edema only was present in the middle meati. Polyps were present in eight per cent of the cases. Previous operations on the above sinuses had been performed in eight cases. Other findings of less frequence will be seen on examination of the chart.

The general diagnosis in these cases was as follows:

GENERAL FINDINGS

Negative	27
(a) no nose complaint	10
Chronic bronchitis	8
Arthritis and myostitis	11
Chronic appendix and gall-bladder	12
Thyroid trouble	5
(a) Exophthalmic	3
(b) Colloid	1
(c) Hypothyroidism	1

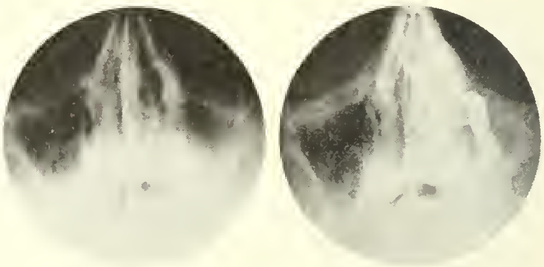
As you see on the chart twenty-seven per cent were found normal except for the nasal sinus disturbance. Ten of these caess came in to the clinic without a nasal complaint. Twelve per cent of these cases had a chronic cholecystitis or a chronic appendicitis or both. Chronic arthritis or chronic myositis or both were found in eleven cases or eleven per cent. Eight cases had chronic bronchitis. Five patients had a pathological thyroid with three of this group belonging to the toxic exophthalmic group. The remaining diagnoses were so varied that only the larger group mentioned above are considered of interest and given.

Transillumination of the maxillary sinuses was carried out routinely in all these cases. This often gave us our first clue toward the finding of a chronic change in the maxillary sinus. At times nasal signs and symptoms would not suggest maxillary sinus disease.

TRANSILLUMINATION

Bilaterally cloudy	40
(a) Bilaterally confirmed by x-ray	36
(b) Unilaterally confirmed by x-ray	3
(c) Entirely negative by x-ray	1
Unilaterally cloudy	42
(a) Bilateral cloudy by x-ray	22
(b) Confirmed by x-ray	17
(c) Cloudy opposite side	1
(d) Both clear by x-ray	2
Total cloudiness on transillumination	82
Bilaterally clear	19
(a) Both cloudy by x-ray	14
(b) One cloudy by x-ray	5
(c) Negative nose examination	8
(d) No nose symptoms in chief complaint	7
(e) Pathology proved by lipiodol	
1. Bilateral hyperplasia and polyps	7
2. Unilateral hyperplasia and polyps	6
3. Unilateral polyps	3
4. Unilateral hyperplasia	2
5. Bilateral hyperplasia	1

Both sinuses were found cloudy in forty per cent of the cases. Unilateral cloudiness was found in forty-two per cent of cases. Of these eighty-two cases representing the total positive number of transilluminations only three were not confirmed by x-ray. This indicates that positive transillumination results usually mean pathology. Bilateral clear transillumination results certainly did not exclude pathology in the antra. McGregor showed that mesothelial or submucosal degeneration of the maxillary sinus lining frequently causes no shadow on transillumination, in fact transillumination of these sinuses may be clearer than usual. Nineteen of our series were clear on transillumination. Fourteen of this group were shady bilaterally and five unilaterally by x-ray. All of this group proved to have definite pathological changes brought out by lipiodol ranging from a simple polyp or hyperplasia to a combination of both hyperplasia and polyps. Eight patients of this group had essentially no suggestive nasal signs of maxillary sinus disease so that the history was probably the only reason for further investigation.



F. D. X-ray shows polypi lateral and nasal wall of left antrum. Lipiodol reveals large polyp on floor of left antrum.

The x-ray findings in eighty-nine cases are reported as follows:

Bilaterally cloudy	69
(a) Bilateral pathology with lipiodol	43
(b) Unilateral pathology with lipiodol	17
(c) Negative	4
(d) Type of pathology with lipiodol	
1. Bilateral hyperplasia with polypi	22
2. Bilateral hyperplasia	15
3. Unilateral hyperplasia	9
4. Unilateral hyperplasia polypi	6

    5. Unilateral polypi -------- 4
    6. Bilateral polypi --------- 3
    7. Absent antrum one side and polyp in other side--- 1

Unilateral cloudiness --------------- 20

  (None had bilateral pathology by lipiodol)

  (a) Unilateral pathology same side by lipiodol---------- 12

  (b) Negative with lipiodol------ 6

  (c) Type of pathology by lipiodol

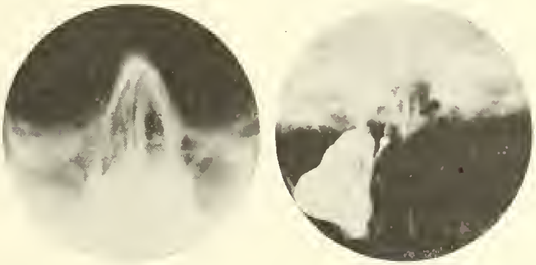
    1. Unilateral hyperplasia and polypi ---------------- 5
    2. Unilateral hyperplasia---- 6
    3. Unilateral polypi -------- 3

Polyps reported—9

  (a) 2 negative after lipiodol

Absent antra—2 (One proved by operation).

Rudimentary antra (1 c.c. size) 2.



Mrs. J. R. D. X-ray shows probable polyp on floor of right antrum. Lipiodol reveals no polyp present.

Sixty-nine were cloudy on both sides. Of these sixty-nine, forty-three were confirmed with lipiodol and seventeen were found to have involvement on one side only. No increased thickening of the lining was found in four cases with lipiodol. The different types of pathology disclosed after the instillation of lipiodol varies from simple hyperplasia or polypi to a combination of both.

In the group numbering twenty that were cloudy on one side, none showed bilateral pathology when followed by lipiodol. The x-ray was confirmed—that is, pathology was found on the same side with lipiodol in twelve cases. No pathology was found in six cases. The type of pathology found in these cases is the same as found where both antra were involved. Large single and multiple polyps were reported in nine cases, two of which could not be demonstrated after instilling lipiodol. One was a polypoid cyst which probably ruptured when the needle puncture was made and had collapsed when the lipiodol was injected. The other polyp which could not be shown by lipiodol instillation was not definite by plain x-ray. It was called a probable polyp by our roentgenologist. Two absent antra were diagnosed by x-ray and the absence of one was confirmed by operation. Rudimentary antra, approximately one c. c. in size, were found in two cases.

We found thickened lining in seventy-nine cases as demonstrated with lipiodol. At no time during our work with radio-opaque material have we found a pathologic antrum which has been overlooked by the x-ray examination. This does not correspond with reports of some men. Variation in this regard depends on the accuracy in reading or interpretation of the x-ray films by a competent roentgenologist.

The results of the irrigation performed are interesting. Thirty-two cases had clear washes all of which had definite pathological changes demonstrated by the instillation of lipiodol. Four cases, where both antra were irrigated because of a bilateral cloudy x-ray, revealed no secretion and showed only unilateral pathology after lipiodol. Consequently, a negative antrum wash does not indicate the absence of antrum pathology.

The instillation of lipiodol in the antra revealed three distinct types of pathology always confirmed at operation. These three groups, as I've stated before, are simple hyperplasia, simple polyps or a combination of both hyperplasia and polyps.

POST-LIPIODOL

Both negative for pathology, 8; 4 had bilateral cloudy ray, 4 had unilateral cloudy ray, (a) 3 were diagnosed polyp.

Bilateral involvement --------------- 46

  Hyperplasia without polyps ----- 18

  Hyperplasia with polyps -------- 16

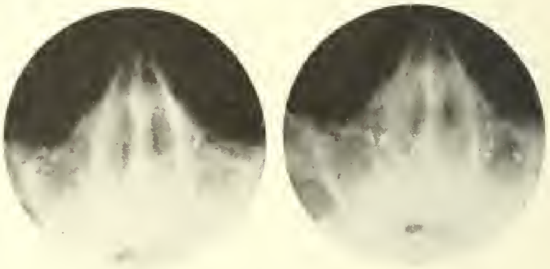
  Hyperplasia one side and polyps other ----------------- 7

Bilateral polypi	5
Unilateral involvement	41
Hyperplasia without polyps	21
Hyperplasia with polyps	10
Polyps	10

These are all graded in our reports on a basis of 1—4, e.g., one indicates a mild degree of thickening and four a severe grade of thickening when the sinus is practically filled with pathological tissue. This evidence has become very important in the prognosis and in the type of operation advised. We have found during this investigation since using lipiodol that maxillary sinuses with 1—2 degrees of hyperplasia will usually respond to a conservative intra-nasal antrum operation where a large window is resected through the naso-antral wall of the inferior meatus producing permanent ventilation and drainage into the nose. Maxillary sinuses with thickening of a severe degree, 3—4, will not usually be cured permanently by a conservative operation but will require a radical removal of all degenerative membrane plus a large permanent opening into the nose to keep them well. No other procedure will give such an accurate diagnosis. The discrepancies in diagnosis by x-ray I have outlined previously. If one depends on the x-ray diagnosis alone, exploratory extra-nasal maxillary sinus operations will be needlessly performed. If a radio-opaque media is used previous to every contemplated radical antrum operation, I dare say that the operator will always be rewarded by the pathological changes he had diagnosed previous to his surgical procedure.

Whether a thin atrophic membrane of the maxillary sinus exists without secretion retained in the antrum cavity is questionable in my mind. If secretion is present and persists after several simple lavages so that the diagnosis of an atrophic membrane is definite, then a conservative intra-nasal operation establishing permanent ventilation and drainage will usually keep them well. Lipiodol injected into the antrum may be necessary to determine such an atrophic lining membrane since a marked shading may have previously been due to an accumulation of pus in the cavity. Emerson believes such an operation will not eliminate focal disease from these maxillary sinuses with atrophic mucous membranes and advises a radical operation of the Caldwell-Luc type.

Thirty-three operations were performed on this group of patients. Twenty-six conservative intra-nasal operations and seven extra-nasal radical operations were performed.



Mrs. C. M. V. X-ray shows both antra cloudy 4. Lipiodol reveals no remaining cavity consequently are filled with degenerated membrane.

With all forms of treatment, forty-three are well or nearly well of nasal symptoms and twenty-two have not been heard from, leaving thirty-five improved or not improved. In regard to improvement of their general trouble, thirty-six are well or nearly well and thirty have not been heard from, leaving thirty-four improved or not improved. Four cases were allergic and were treated from the allergy standpoint in addition to sinus treatment.

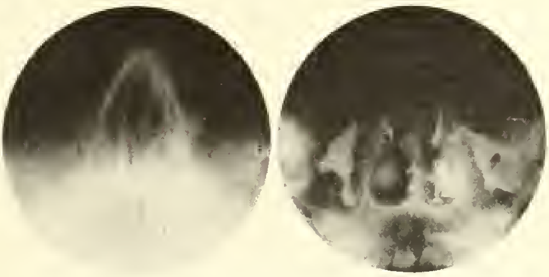
Previous treatment of every type had been given to thirty-one patients intranasally. Seventeen were operative and fourteen had sprays or nasal lavage. Sixty-one cases gave no history of previous nasal treatment.

CONCLUSIONS

1. Males are more frequently involved with chronic maxillary disease than females—ratio of two to one.
2. Seventy-six per cent of patients gave no nasal symptoms in their chief complaint.
3. Thirty-five per cent of patients did not

have intra-nasal pathology suggestive of para-nasal sinus disease except septal obstruction which was present in twenty-two.

4. General examination was negative in twenty-seven, ten of which had no nasal complaint.
5. Cloudy maxillary sinuses on transillumination usually indicate pathology.
6. Clear maxillary sinuses on transillumination do not rule out pathology.



O. B. X-ray shows both antra cloudy 3. Lipiodol instillation reveals mucous membrane hyperplasia 3 plus polypi 2 in both antra.

7. Cloudy maxillary sinuses by x-ray usually indicate pathology with an error of eleven per cent.
8. Radio-opaque material in the maxillary sinuses shows the pathology present and decides definitely what operation is most suitable.

BIBLIOGRAPHY

Jones, R. L.; Iiodized Oil in Diagnosis and Prognosis of Chronic Maxillary Sinusitis. West. Virg. M. J., September, 1928.

Anderson, W. C.; Use of Lipiodol in Diagnosis of Nasal Sinus Disease. Arch. of Otolaryng. Apr. and May, 1928.

Emerson, F. P.; Degenerative Changes in the Lining Membrane of the Maxillary Sinus and Their Relation to Systemic Infection. Annals of Otology, Rhinology and Laryngology, Vol. XXXVII, p. 113, March, 1928.

Van Osdol, H. A.; The Diagnosis of Sinus Disease by Injection of Opaque Solution. Annals of Oto., Rhin., and Laryngology, Vol. XXXVII, p. 943, September, 1928.

Anderson, H.; The Use of Iodized Oil in the Diagnosis of Nasal Sinus Disease. Arch. of Otolaryng., Vol. VII, p. 340, April, 1928.

MacCready, Paul B.; Iodized Oil as an Aid in the Diagnosis of Chronic Sinusitis and of Maxillary Cysts. Boston M. & S. Jour., p. 195, p. 464, Sept., 1926.

Forestier, J. and Sicard, J. A.; Bull. et Mem. Soc. Med. d Hop. de Paris, 46, p. 463, Mar., 1922.

Fraser, R. H.; Instruments for Injection of Iodized Oil into the Sinuses. New Adaptation for Opaque Injections in Accessory Sinuses of Nose and Ear. Arch. of Otolaryng., Vol. VII, p. 208, March, 1928.

Proetz, A. W.; Displacement Irrigation of Nasal Sinuses. New Procedure in Diagnosis and Conservative Treatment. Arch. Otolaryng., 4:1-13, July, 1926.

McGregor, G. W.; The Formation and Histologic Structure of Cysts of the Maxillary Sinus. Arch. Otolaryng. 8; 505-519, Nov., 1928.

DISCUSSION

DR. W. LIHELY SIMPSON (Memphis): Dr. Greenfield's paper brings before us one of the most interesting subjects with which the rhinologists have to deal.

Radio-opaque substances have their place in sinus examination, especially in determining the outline of the sinus and function of the cilia. Lipiodol is generally used, although expensive. We prefer brominol, because its viscosity can be varied from seven to that of lipiodol, which is one hundred forty as compared with water at one. It is less expensive, stable at room temeperature and consequently does not become irritating if kept in a warm place. The opacity to x-ray is the same with low or high viscosity. The latter is an important point in filling the ethmoids and sphenoids by gravity and suction.

One must know the exact relationship of tube, head and plate in making the exposure. Shadow pictures are very deceptive and can not be interpreted unless the above facts are known and the shadows cast compared at different angles. This necessitates three plates; two horizontal, that is, lateral and posterio-anterior, and a vertical exposure. The cavity must be at the same angle in each group of exposures or the shadow will be distorted.

In regard to the technique partial filling of the cavity seems to have an advantage over attempts at complete filling. The latter is seldom accomplished because of partial petitions, position of normal ostium and accessory openings. If partial filling is resorted to, we eliminate air bubbles, and preliminary washings. The horizontal ray causes a reproduction of the oil level that furnishes added information. Vertical reproduced shadows enables us to map out the cavity by lighter or more dense lines which might be roughly compared with the reading of a contour map. It is easily seen that these shadows can be more effectively mapped if the media does not fill the entire cavity. The time of exposure is diminished, the shadows more definite and the contrast of the surrounding tissues greater if the cavity is partially filled.

Radio-opaque substances are of great help in x-ray study of the sinuses, but there is more information overlooked than obtained from the average picture.

Transillumination has never given us any information not obtainable by roentgenographic studies. False impressions are obtained as Dr. Greenfield has stated. Transillumination will not distinguish between polyps and uniformly thickened membrane, or empyema and congenital absence of the sinus. It fails to show the existing pathology more often than it reveals its presence. The interpreting of transillumination is based on comparison, of which we have no standard. Records are of no value because of inaccuracy resulting from no standard of comparison. One has only to review his findings at operation and recall 'he impression obtained from transillumination to see the fallacy of depending on this diagnostic procedure.

Hajek has given us a simple classification of sinus pathology which I shall briefly outline:

Inflammatory changes in the mucous membrane—acute catarrhal inflammation. The mucous membrane is swollen, loosened and infiltrated with yellowish fluid. The edematous condition of the areola tissue predominates. The entire cavity of the sinus may be filled. Microscopically, the fine granular material separates the connective tissue network. The cellular infiltration is not marked and chiefly localized in the region of the blood vessels.

Chronic catarrhal inflammation: Microscopically there is an edematous swelling of the mucous membrane as in the acute, but the deeper layer is also involved. Cysts, diffuse hypertrophies and pedunculated polypi may be present. Microscopic appearances are much the same as in the acute form except that a few goblet cells are present in the epithelial layer.

Acute suppurative, or empyema: The mucous membrane shows some edema, diffuse hyperemia with scattered hemorrhages into the tissue and a layer of pus on the surface. Microscopically, the mucous membrane is covered everywhere with ciliated epithelium which is infiltrated with leucocytes. A high grade infiltration is found in all layers of the membrane. The edematous infiltration is less pronounced than in the catarrhal forms.

Chronic empyema: Microscopically, it is about the same as the acute form, except for the mucopurulent exudate. The microscopic appearance vaires according to the genesis of the chronic empyema.

Bony changes: Both hyperplasia and destruction are seen. The suppurative types show more changes in the epithelial and periosteal layer and less in the glandular stratum. Edema is not as marked and the membrane may be very thin. Bony changes are more frequent in the suppurative type, as are systemic symptoms and complications. We could not expect this pathologic tissue to return to normal as rapidly as the changes which occur in the catarrhal condition. Pictures with lipiodol show nothing in most of these cases. The plain x-ray plate shows a definite, uniform increase in density. The membrane is too thin to be demonstrated by lipiodol. In this type of infection of the ethmoids the septa may be entirely absorbed, and I hope later to present a series of cases in whom the antral mucosa and bone of the canine fossa have been studied microscopically and changes in both shown to exist as we know occurs in the ethmoids.

I prefer a pathological classification to one that grades tissue changes on a physical basis, disregarding microscopical findings.

Lipiodol is not likely to show the pathology existing in epithelial and periosteal layers where the membrane is uniformly thickened and in which the prognosis is worse than in those cases where the pathology exists in the glandular layer. Although in the latter, the membrane is much thicker and shows more positive findings with lipiodol injection, the prognosis is better.

Indications for proper operative procedures are determined after thorough study of the case history, findings in the nose, and roentgenographic plates. Many other things are to be considered, the most important of which are systemic effects and local complications which necessitate more radical procedures.

DR. C. D. BLASSINGAME (Memphis): In the last month I have had two patients who had had lipiodol injection of the maxillary sinuses by another rhinologist. They came in with acute antrum inflammation. One of them said the antrum was free of pus before the lipiodol injection but soon after developed profuse purulent discharge with great pain. The other case was x-rayed ten days following the injection and the antrum was still largely filled with the lipiodol.

Here is my idea: Any procedure that is agitated as a routine procedure and impressed as a neecssity on the public, unless it does warrant that extent of practice, should be condemned beyond proper limits. I am not convinced that lipiodol is necessary in every case and I believe it is bad practice to advocate it as a routine. In certain cases lipiodol is confusing and misleading as in the case the doctor reported, showing a polyp in the antrum before the injection which could not be seen after the injection. Certainly, a polyp in the middle of the antrum is covered up by the lipiodol and cannot be seen after the injection.

Also a thickness confined to only a part of the antrum wall may be entirely missed when the antrum is filled with lipiodol. When we are thoroughly standardized on lipiodol injections we shall find that its field will be greatly narrowed and the general public will not feel they must have this done in order to have a correct diagnosis made of their sinus condition.

DR. GOYER: I have been very unfortunate in using lipiodol for the simple reason that I don't know anything about x-rays and after plates have been made, invariably, I know less than I did before.

I have just had a case in which we used lipiodol, and I knew very little about it before as far as my diagnosis was concerned, and after we had the plates, neither the x-ray man nor I was sure of anything. It is very interesting to me because I am anxious to get some information along this line.

DR. STINSON (Memphis): We are all anxious to know about it. I think Dr. Greenfield has started a good step. He has shown us a series of slides, listings on one hundred cases. Unfortunately, all sinus cases don't all come to operation.

I would like Dr. Greenfield in a year or two years to render a final report on the same series of cases—operative findings.

DR. GREENFIELD (closing): I certainly agree with everything said in the discussion. In regard to the routine instillation of lipiodol in maxillary sinuses, I thought I had made it clear that I had used lipiodol more or less routinely, only in those maxillary sinuses that were markedly cloudly by x-ray. I certainly would not do it routinely in all suspected cases of maxillary sinusitis. However, if these are any real contraindications for its use, we have not found them. Only one patient returned with empyema of his antrum which may possibly have been due to the lipiodol instillation two and a half weeks previously. This patient's antrum was clear on wash previous to the lipiodol instillation and also clear four days after the instillation but showed a delayed emptying capacity by the retention of a small amount of the oil. However, we never undertake an injection unless we have other corroborative evidence of possible mucous membrane changes such as positive x-ray, transillumination and clinical findings. In our hands it is only an accessory test in deciding the best care of the patient. You must use your own judgment as to when it is indicated and most helpful.

I am much interested in the classification Dr. Simpson gave of chronic maxillary diseases. It is true there are two large groups—the suppurative and non-suppurative types. However, it is hard to tell where to draw the line as so many hyperplastic maxillary sinuses have round globules of muco-pus of various sizes.

We do not have any difficulty, as a rule, in completely filling the maxillary sinuses. The x-ray man knows when they are completely filled by a comparison of the different positions in which the x-rays are taken.

A short description of our technic will show you how to tell when the antrum is filled. After making the puncture through the inferior meatus the antrum is irrigated with normal saline solution until the return solution comes away clear. Then through the same needle the lipiodol is injected into the antrum until it appears at the external nares when we assume that the cavity is completely filled because the natural opening is placed high in the naso-antral wall and because the lipiodol due to its specific gravity displaces completely all the solution in the antrum. When the water is completely displaced, the sinus is filled, particularly if the head is inclined a little towards the side involved. That is the way we tell. One can wash and instill lipiodol through the natural opening if you wish, but it is more difficult.

The April Journal Will Contain The Program of

THE STATE MEETING

Nashville, April 8-9-10

PLAN TO BE PRESENT

Centennial Meeting Unexcelled Program

Interesting Exhibits

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1930

EDITORIAL

OUR ADVISORS

Recently there came to my desk a copy of the January issue of the Graphic Survey Magazine. It contains sixteen articles by different authors on the general theme, "The Cost of Health." Some of the authors are doctors. Most of them are not doctors. Some of the doctors are engaged in actual practice. Others are not engaged in actual practice.

The articles are well written. They represent the viewpoint of each of the contributors but the viewpoints of a majority of the authors are not the viewpoint of the doctor.

Every doctor will admit that the medical profession has faults. Doctors are human. Every one will admit that the doctors' financial status is as insecure as any other person of equal ability and training. Most of the faults are traceable to democracy itself. For instance, it is alleged by one author that many doctors are incompetent. The reply of the profession to this allegation is that the profession has labored diligently to create standards of qualifications for the practice of medicine in the various states which would guarantee to the public capability and honesty. Opposition to these measures in the various legislative bodies has arisen from citizens who are making a cry about incompetency.

Another makes the point that the average sick layman makes a poor choice of a doctor, or that he is incapable of selecting the doctor that should handle his case. This allegation suggests the advisability creating a super-body somewhere to advise the public as to which doctor should be consulted. This is a slap at the fundamentals of our form of government. There are people now living who doubtless would like to arrogate to themselves the power to tell the people what church they should attend, what school they should attend, the hours they should get up, the hours they should retire, when they should eat breakfast and what they should eat, and even the doctor they should consult, but no one has yet pointed out that human individual or organization in which should be vested any such power.

If such a super-power would be good for the public then let's admit that our republican form of government is a failure, that liberty is a myth and that our notions about American institutions are the worst notions we could have.

We, as doctors, have some views concerning commercial practices. We have not aired them. We know there are articles sold to the public at a price that is five hundred per cent above their actual manufacturing cost.

It is just within the last few years that a campaign to bring about honesty in advertising has been launched.

We might ask the question, "What is the sense and use in these expensive campaigns of advertising?" We know that the expense of advertising enters into the sale price of a product. Such an article as coffee would be purchased by those who use it without it being advertised. The advertising, therefore, makes for an increase in the sale price which is thoroughly unnecessary, but we are not advising commercial men as to how to conduct their business.

It seems the medical profession is receiving a world of advice in a very indirect way. It is receiving it second-hand. The public is being given the advice as to how very bad doctors are. The public is being educated to believe that the medical profession has so many faults as not to be worthy of confidence.

Dr. Emerson goes so far as to criticise rather harshly the action of the Medical Society of Chicago when it expelled a member for unethical conduct.

It now seems that it is unfortunate that there are many men who hold the degree of M.D. who are endeavoring to stand before the world as doctors but who in no sense, represent fairly the attitude of the medical profession.

It seems fair to state that a definite distinction should be drawn between those who are engaged in rendering service to the public as practitioners of medicine and those who hold the degree of M.D. but do not practice. Some of the latter group assume to advise both the profession and the public concerning the practice of medicine. Their position certainly is ill assumed.

The practitioners of medicine as represented by organized medicine today do not assume a dictatorship over the science of medicine—they have never assumed such a dictatorship. The code of ethics that has been developed through the centuries permits of no such a dictatorship. Organized medicine is opposed to any form of dictatorship regardless of whether the power be vested in the state, or a body of self constituted advisors.

The profession is even opposed to a group of practitioners having any such power over the lay public or the profession.

In the final analysis there is not a single ill of the medical profession of which any author has spoken that will not be solved through the ordinary process of adjustment which comes by progress. The practitioners of medicine will adjust themselves and their work to changing events. It might be stated also as a truism that any group which endeavors to force changes out of season is more liable to bring a tragedy than a benefit.

For goodness sake turn to your mortality statistics and note the reduction in mortality that has taken place through the decades. America today has mortality figures that would compare favorably with every other civilized country notwithstanding all the faults of the medical profession.

The writer, for one, had hoped that the committee organized to investigate into the cost of medical care would develop information that would be of practical value in bringing about whatever fundamental adjustments that are necessary in the profession of medicine. It is becoming increasingly apparent that it is the business of the committee to find fault and give advice rather than to develop facts.

The writer may be a type which Dr. Emerson designates a "fundamentalist." He certainly is not a "socialist," or a believer in many of the fake remedies socialists propose for the evils of today.

Again we will repeat that if socialism is forced on the practice of medicine it will be a long step toward state socialism. It would be a very good idea for some of our advisers to contemplate this possibility.

1930 MEMBERSHIP

As has been stated editorially in each issue since November the Journal, subscription year, the membership year, and the fiscal year of the Association all correspond to the calendar year.

The January issue of the Journal was mailed to all the members of the Association as of December, 1929. The February issue will be forwarded to all members as of December.

The mailing list for the March issue will be composed of those members whose dues for 1930 have been paid.

Please forward your dues to your county secretary in time for the funds to reach the headquarters office before March 5th.

SCIENCE

We know of no word in the English language today that is more loosely used and more abused than the word "Science."

The word "Science" has carried a significance in the past that it can no longer claim. For instance, a recent issue of the Literary Digest carried information about an incident in educational circles.

It seems that the head of a college in Missouri dismissed a teacher because he circulated questionnaires in his class on the question of sex. A committee from some organization of teachers proceeded to insist that the teacher had been unjustly dealt with on the ground that the head of the

University had no business interfering with such a laudable piece of *research work in science*.

Science has been variously defined. The shortest definition, and probably the best, is "science is knowledge." The next best definition is "science is the knowledge of nature's way of doing things." Another is "Science is classified knowledge."

All these definitions bring in the word "knowledge." It is not information. It is not speculation. It is not a notion. Knowledge is knowledge. It is not a theory. A man who has knowledge knows. A scientist is a person with knowledge—not theories—not notions. The scientist has for too long been depicted as a man with a long coat, horn spectacles with a piece of laboratory apparatus in his hand.

THE CENTENNIAL CELEBRATION

It suffices to say at this time that the plans and arrangements for the celebration program in Nashville on April 8-9-10 will eclipse those of any meeting that has ever been staged by our association.

DEATHS

Dr. F. B. Hamilton, 49, died at his home in Jackson on December 12th after an illness of several weeks. He graduated from the University of Tennessee Medical School in 1905.

Dr. Robert E. Looney, 52, head physician and assistant superintendent of the Davidson County Asylum, died on December 10th. He was a graduate of the University of Nashville Medical School in 1902.

Dr. D. M. Dryden, of Petersburg, died suddenly in Fort Lauderdale, Florida, on January 15th, aged 82 years.

Dr. Dryden graduated from the University of Nashville in 1873.

Dr. J. T. Leeper, 52, of Lenoir City, died on January 25th after an illness of several months. Surviving are his widow and two sons, Dr. Avery Leeper, who was associated with him in the practice of medicine, and Randolph Leeper.

Dr. Leeper graduated from the University of Louisville School of Medicine in 1898.

Dr. J. H. Walker, 66, of White Pine, died January 4th at the Morristown hospital following an operation.

Dr. Walker had practiced medicine forty-five years, having been graduated from the Knoxville Medical College in 1884.

RESOLUTION OF RESPECT

In Memory of

Dr. J. Thomas Leeper

Dr. Leeper was born and reared in Loudon County and attended the common schools that were afforded a young man in that day and time.

He came from one of the best families of this section of East Tennessee, his father, James Leeper, having been a prominent farmer residing in the upper end of Loudon County.

After completing his literary education early in life, he chose the medical profession for his life's work. He graduated from Louisville, Kentucky, College of Medicine in his early twenties, after which he came to his home town, Lenoir City, and began the practice of medicine. He became active and was a hard worker and in a short time his practice grew until his services were always in demand.

After doing general practice for a few years he became interested in surgery and specialized in that line. He frequently took post-graduate work in surgery in New York City, Chicago and Mayo Foundation Clinic. Thus he became distinguished as a country-town surgeon. Physicians from the surrounding country frequently referred their surgical cases to him.

Dr. Leeper was kind, sympathetic, alway congenial toward his patients and friends. Thus he became liked and loved by those who knew him and patronized him as a physician and surgeon.

Dr. Leeper was railway surgeon for the Southern Railway for a number of years and at the time of his death was also surgeon for the Lenoir Car Works at this place.

We, the members of the Loudon County Medical Society, realizing the great loss in our profession, bow in humble submission to the will of Him who doeth all things well.

Therefore, be it resolved that we extend to the family of the deceased Dr. Leeper our heart-felt sympathies in this their sad hour of bereavement.

That a copy of these resolutions be sent the family and a copy be spread on our minutes and a copy be sent our State Medical Journal; also a copy be sent our local papers for publication.

—Loudon County Medical Society.

Dr. D. C. K. Binkley was born in 1857, near Mt. Juliet, Tenn. He received his early education in the common schools of Davidson County, Tenn., and later attended a private school in Decaturville, Tennessee. He pursued a medical course at Vanderbilt University, where he completed his studies in 1878, and graduated with the degree of M.B. at the head of his class, winning the Founder's medal and also a medal in anatomy. Immediately after his graduation, he went to Hustburg, Tennessee, to begin the practice of his profession. It was not his intention to remain at this place permanently, but becoming attached to his patients, he delayed his departure from year to year and never left.

In 1891 Dr. Binkley established a drug business in connection with his practice, in which activity he engaged for many years. He was a member of the county and state medical societies, and of the American Medical Association. After practicing medicine for over fifty years, he died August 14, 1928, following an operation at the Baptist Hospital, Nashville, Tennessee. He is survived by his widow and eight children.

Dr. Binkley endeared himself to his fellow practitioners, by his courteous demeanor and great loyalty to the profession. He bound his patients as it were to him, with hoops of steel, by his trustworthiness, honesty and ability. He did not practice his profession altogether for the sheckels he got out of it, but having a deep and abiding love for humanity and the cheer and consolation he might be able to bring it, he often-times braved the cold, dark, storm and rain, to alleviate pain, stay the hand of disease, and help to brush aside the lowering clouds that hovered over and around the afflicted homes.

He has been called to his reward after a life well spent and a battle well fought. It must be a consolation to those left behind to know that he wrought well; was a great doctor; a man four-square; could meet his fellowman openly, knowing he had done no one an injury. Therefore, be it resolved that we as a profession have lost a true and loyal friend; a confrere, who was, if possible, ethical to a fault; that he will be missed from our ranks, and that his place will be hard to fill; that we sympathize with the family, friends and patients in their great loss.

This January 27, 1930.

Respectfully submitted,

W. W. Slayden, *Committee.*

The Loudon County Medical Society, in regular session assembled desire to express their great loss and profound grief experienced by us in the death of our friend and fellow practitioner, Dr. Thomas Penland of Philadelphia, Tenn., whose death occurred on Dec. 30, 1929.

Whereas, we recognized his ability and charity to all who called upon him, and especially the poor of this and adjoining counties who came to him for professional services, and for his advice and friendship to all, and

Whereas, we know his passing will be a great loss not only to his profession, but to a host of friends;

Therefore be it resolved, that we submit to the will of our Creator in grieving for our departed friend, and to strive to emulate his great virtues.

And be it further resolved, that a copy of these resolutions be sent to the family of Dr. Penland, a copy be given to the State Medical Journal and to the local papers for publication, and that resolutions be spread upon the Minute Book of our Society.

—Loudon County Medical Society.

MARRIAGES

Mr. and Mrs. J. J. Covington, of College Grove, announced on January 5th the marriage of their daughter, Alma Louise to Dr. Edward B. Rhea of Nashville.

Dr. R. S. Duke, Nashville, and Miss Louise Potter were married on November 26th in Louisville, Kentucky.

Dr. Conley H. Sanford, Memphis, and Miss Mary Elizabeth Henderson were married on December 16th.

NEWS NOTES AND COMMENTS

Here is a good report dated January 16. *How many other secretaries can equal it?* "Dear Doctor Shoulders:

In reply to your letter of January 10th I beg to advise you that each and every member of the Monroe County Medical Society paid his dues for the year 1930.

With best wishes, I am

Very truly yours,
H. M. KELSO, M.D., *Secretary,*
Monroe County Medical Society."

Dr. T. Fort Bridges announces the opening of offices for the practice of pediatrics at 512 Doctors' Building, Nashville.

Dr. Henry C. Cunningham announces opening of offices in Acuff Building, West Clinch and Walnut Streets, Knoxville. Practice limited to Diseases of Ear, Nose and Throat.

Dr. Hiram A. Laws, of Chattanooga, has been appointed Chief of Staff of the Baroness Erlanger Hospital for 1930.

Dr. Duncan Eve., J., of Nashville, succeeds his father as Chief Surgeon of the N., C. & St. L. Ry.

Dr. J. B. White, of Lewisburg, has moved to Dayton where he will make his future home. Dr. White will be the director of the public health unit of Rhea and Meigs Counties.

Dr. Walter Thomison, of Dayton, is reported seriously ill, suffering from pneumonia.

Dr. John E. Frazier who has been in the Presbyterian Hospital, New Orleans, since graduation, has opened his office in Newbern.

MEDICAL SOCIETIES

Lack of space last month compelled us to omit the printing of our medical society notes. However, the news of what is happening in the county societies is too important to be omitted. We are, therefore, publishing these reports this month in addition to our regular society news.

Anderson County—The Anderson County Medical Society held its regular meeting at Clinton on December 2nd.

Bedford County—A meeting was held on December 19th, at which time officers were elected for the coming year.

The Secretary reports that the society has had a profitable year with splendid attendance and interesting scientific papers read and discussed at each meeting.

Benton - Carroll - Henry - Weakley—The Tri-County Society met as usual at Lynn Hotel, McKenzie, on December 10th. Officers were elected and a scientific program was given by Nashville doctors. Speakers and subjects were Dr. Jack Witherspoon, "Heart Failure;" Dr. R. C. Derevaux, "Vacular Hypertension;" Dr. W. C. Floyd, "Goiter."

Blount County—The annual meeting of the members of Blount County Medical Society was held on December 26th, at which time the newly elected officers were installed.

Beginning with the new year, the society is contemplating putting on a unique contest for a handsome prize to the member of the organization who during the year prepares and delivers the best scientific paper before the society. A committee has been appointed to work out the details of the contest and to select and award the prize at the end of the year 1930.

Bradley County—The annual banquet was held December 19th at Cherokee Hotel, Cleveland. Dr. L. T. Stem, President of the State Medical Association, was the guest of honor and chief speaker. In his talk he laid special stress on the danger of our State drifting into State Medicine, via the State Health Department; also the United States Public Health Service through the Shephard-Towner Act, etc.

Carter County—The annual banquet of the Carter Society was held at Lynnwood Hotel, Elizabethtown, on December 3rd.

Dr. Murrell Pinson read a paper on "Medical Economics" which was followed by general discussion.

Davidson County—On December 17th the program was as follows: "Transfusion in Infancy and Childhood with Report of 135 Transfusions," by Dr. J. C. Overall. Discussion opened by Dr. M. S. Lewis.

On January 7th the annual banquet was held at the Belle Meade Club.

Dyer, Lake and Crockett County—The regular monthly meeting was held at the Atwood Hotel on December 4th in connection with the annual banquet and election of new officers for the society.

In addition to the officers whose names are published in this issue, Dr. J. D. Brewer was elected delegate to the state society from Dyer County and Dr. W. W. Holland alternate. Dr. J. P. Moon was elected delegate from Lake County and Dr. W. L. Summers alternate. Dr. E. S. Hopper was elected delegate from Crockett County and Dr. J. L. Powell alternate.

Five County Medical Society—On November 26th the following papers were read:

"Prophylaxis and Treatment in Diphtheria," by Dr. W. H. Neal, Lawrenceburg.

"Practical Immunization of Diphtheria and Scarlet Fever," by Dr. J. H. Litterer, Nashville.

Officers for the year 1930 were elected.

Giles County—The Giles County Medical Society met in regular session on December 19th. Officers were elected for the year 1930. Immediately after the regular session the doctors adjourned to the banquet room, where a big turkey dinner was enjoyed by all.

Hamblin County—Members of the society met on December 10th at the home of its president, Dr. W. E. Howell. An elaborate four-course dinner was served by the host and his wife. Officers were elected at the business session after the dinner. Those present were Drs. Howell, Henderson, Shields, Campbell, Painter, Carroll, Ryburn and Rev. S. H. Hay.

Knox County—On December 17th Dr. A. F. Richards talked on "Tuberculosis," and Drs. M. F. Haygood, J. B. Naive and E. R. Zemp led the discussion.

Dr. E. G. Wood read a paper on "Consideration of Certain Factors in Acute Intestinal Obstruction." Dr. Alexander led the discussion.

Officers for the coming year were elected.

Monroe County—At the January meeting Dr. J. W. Cameron, Sweetwater, discussed "Gastric Ulcer," and a talk was made by Dr. J. F. Brewer, Jr., of Knoxville, on the control of tuberculosis.

The next meeting will be held in Sweetwater.

Maury County—A meeting was held on December 9th at the Elks Lodge rooms. Officers were elected. Three new members were admitted.

The retiring president, Dr. Watt Yeiser, delivered an address. Several cases of Tularemia were reported.

A letter was read from the Secretary of Davidson County Medical Society inviting all the Maury County doctors to Nashville to hear Dr. Geo. W. Crile and Dr. C. H. Mayo.

Montgomery County—On December 10th Dr. M. L. Hughes was host for nearly one hundred doctors from Montgomery County, Todd County (Kentucky) and Christian County (Kentucky). A four-course dinner was served at the Woman's Club by the nurses of the Clarksville Hospital. Before the regular program Dr. Robert Caldwell, of Nashville, conferred the "degree of Doctor of Medicine and Veterinary Surgery" upon Mr. John J. Conroy, President of the Clarksville Hospital Company, Inc.

The scientific program was given by three Nashville doctors, as follows: Dr. T. H. Harrison, "Oedema;" Dr. Perry Bromberg, "Urological Conditions in General Medicine;" Dr. John Burch, "Abortion."

Robertson County—The Robertson County Medical Society met Tuesday, December 17, at Springfield. Dr. and Mrs. C. F. DeLap were hosts at their home "Birdsong" to the members and visitors at a quail luncheon.

In the afternoon the regular program was held. After reports of clinical cases the regular program was taken up.

The first paper was given by Dr. W. S. Rude of Wautauga Sanitarium, Ridgetop, whose subject was "Pleurisy." Next was the presidential address delivered by the retiring president, Dr. J. S. Freeman, on "An Organized Medical Society." Both papers evoked liberal discussions. Members present were Drs. Freeman, Mathews, Moore, Porter, Rude, Fentress, Thomas, Garner, Bradley and Fyke; visitors, Dr. W. L. Gossett of Adairville, Ky., and Dr. W. T. Henry. The next meeting will be held here Tuesday, January 21, 1930.

Sullivan-Johnson—On December 6th this society enjoyed its annual banquet at Kingsport. The largest attendance of the year was present, and all were benefited by the meeting.

Tipton County—On December 19th this society met in Dr. G. B. Gillespie's office. Officers were elected. Several interesting case reports were made and regular meetings planned for 1930.

White County—The regular monthly meeting was held on December 10th. Dr. A. A. Bradley read a paper on "Management of Infectious Diseases." Some interesting case reports were given. Officers were elected.

The White County Medical Society was organized many years ago by Dr. Mack Snodgrass, Dr. W. B. Young and and perhaps others. It is one of the oldest county societies in the state and has never ceased to function since it was organized. It has 100 per cent membership, every eligible physician in the county being a member of the society. This is true of only one other county society in the state, it is said. The White County Society is one of the outstanding medical societies of the state and has attracted much attention by reason of its work.

Through the efforts of the White County Medical Society and the Putnam County Society the Four-County Medical Society was organized about a year ago, comprising the counties of White, Cumberland, Putnam and Overton. The next meeting of this society will be held in Sparta at the Lee Hotel some time next month.

Wilson County—A meeting was held on December 5th at the Chamber of Commerce Building. After a scientific paper was read officers for 1930 were elected and Dr. L. D. Allen, Smithville, the retiring president, delivered a very interesting address.

Blount County—Here is one of the best reports we have received this year, so we reproduce it in full.

	Meetings attended	Case reports	Papers read	Papers discussed	Clinics presented
Bryant, K. A.	38	3	2	2	1
Burchfield, G. W.	35	5	2	10	0
Carson, J. E.	39	8	1	10	0
Crowder, C. F.	35	8	2	4	1
DeLozier, B. E.	33	8	2	3	0
Ellis, E. L.	26	14	2	11	0
Gamble, A. M.	14	3	1	2	0
Griffin, E. W.	19	6	2	1	0
Hall, J. E.	2	0	0	0	0
Hannah, G. F.	0	0	0	0	0
Hyder, R. L.	36	10	2	4	1
Jones, A. L.	2	0	1	0	0
Kittrell, S. S.	21	5	0	1	0
Lequire, G. D.	40	18	3	14	0
Lovingood, W. B.	36	6	1	7	0
Lowe, E. H.	34	10	2	3	0
McCulloch, J. A.	43	15	2	12	1
Norton, J. W.	0	0	0	0	0
Olin, L. C.	17	2	1	2	0
Thomas, D. R.	22	4	3	11	0
Vinsant, C. C.	38	10	2	11	0
Waters, J. M.	0	0	0	0	0
Zoller, F. A.	24	3	1	5	0

Total number of meetings during the year, forty-four.

Two scientific papers were read by visiting physicians.

Also an address on the venereal question in Tennessee by a representative of the State Board of Health.

The Society meets regularly every Thursday night at eight o'clock in the First National Bank Building, room 311.

Bradley County—At the regular meeting, January 2, Dr. E. H. Ferguson presented the subject of the "Importance of the Eye Ground examination and its aid with a complete eye examination in the localization of *brain* lesions."

A case was presented with complete history and observations over a period of three years. The patient was present at the meeting and afforded a very interesting study for the members.

Davidson County—On January 7th a banquet was given and officers elected.

January 14th—"Fractures of the Shaft of the Femur," by Dr. Duncan Eve, Jr. Discussion opened by Dr. George K. Carpenter.

January 27th—"The Relation of Growth and Development to Facial Deformities," by Dr. Martin Dewey, D.D.S., New York City. This was a joint meeting with the Nashville Dental Society.

February 4th—"Ringworm," by Dr. E. E. Brown. Discussion opened by Dr. C. M. Hamilton.

Loudon County—The Loudon County Medical Society and the Loudon County Bar Association held a joint meeting in December at Hotel General Lenoir. About twenty were present and a number of addresses were delivered. It is said the lawyers did most of the talking and the doctors did the eating.

Madison County—On January 7th the weather interfered with the attendance to such an extent that the regular program was postponed. Only informal case reports and discussions were given.

January 21st, Dr. R. L. Witherington read a paper to a large number of members and visitors.

Hamilton County—The Chattanooga and Hamilton County Medical Society is studying their city's need of a new hospital.

At their meeting on January 23rd, Dr. E. White Patten read a paper on "History and Importance of the Refractive Lens." Dr. T. Lyles Davis opened the discussion.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—This Society met at Savannah on January 28th with the following program:

"Pain," by Dr. J. H. Pickard, Hohenwald.

"Medical Ethics," by Dr. O. H. Williams, Savannah. Discussion by Drs. H. C. Boyd, T. J. Stockard, Herman Hawkins and J. H. Pickard.

"Acute Abdomen," by Dr. James W. McClaren, Jackson. Discussion by Drs. J. H. Tilley, H. C. Boyd, C. C. Stockard, O. A. Kirk, and O. C. Doty.

Knox County—This society is busy. Just read what they did in January.

January 7th—Presidential Address by Dr. Ray DePue.

January 14th—"Spinal Anesthesia," by Dr. E. S. Clayton. Discussion opened by Drs. A. G. Kern, Kyle Copenhaver and E. R. Zemp.

January 18th—Address by Dr. Frank LaHey, Professor of Surgery, Harvard Medical School. Dinner at Hotel Andrew Johnson.

January 21st—"Hyperthyroidism," by Dr. R. G. Waterhouse. Discussion opened by Drs. W. S. Nash, Joe T. Smith and C. J. Carmichael

January 28th—"Placenta Praevia," by Dr. Robert Baker. Discussion opened by Drs. Williamson, Armstrong and M. M. Copenhaver.

January 30th—Called meeting.

February 4th—Address by Dr. J. J. Greer.

February 11th—Address by Dr. Willis C. Campbell, Memphis.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

The Place of Ethylene Anesthesia, by James T. Nix, M. D., New Orleans. New Orleans Medical and Surgical Journal, January, 1930.

The author's paper deals with over seven thousand cases at Hotel Dieu also from a questionnaire sent to one hundred hospitals and information gleaned from the literature and correspondence. Relaxation from ethylene is not equal to ether but more so than nitrous oxide. It is sufficient for ninety per cent of abdominal operations but small amounts of ether must be added in the ten per cent. It is the anesthetic of choice in obstetrics except when complications are present.

Explosions from dilute mixtures are admitted but there will be no static sparks when the humidity is over fifty per cent which is always the condition in New Orleans. A hyperdermic of morphine and atropine is always given and sometimes local anesthesia is added. Most hospitals claim there is no contra-indications to its use and it is combined with ether in upper abdominal surgery. The presence of a cautery is prohibited. Brain surgery, ear, nose and throat surgery of infants are mentioned as contra-indications.

His conclusions are as follows:

1. We do not pretend that ethylene will replace the local, regional, spinal and rectal anesthesia, for in our own service we employ the other anesthesias several hundred times a year.

2. We do believe, however, that ethylene and oxygen anesthesia is the inhalant anesthetic of choice for general surgery and normal obstetrics.

3. In operations requiring great relaxation at times other aids have to be supplemented; e. g., local injection of the muscles and peritoneum and, in a few instances, a small amount of ether is necessary.

4. The surgeon and anesthetist must at all times work in complete co-operation and occasionally surgical technic, in particular the using of retractors, packing and the method of closure must be modified to meet anesthetic requirements.

5. In a small percentage of cases it is not the general anesthetic of choice; e. g., brain surgery, the presence of the cautery, and in the roentgenray room.

6. Existing kidney disease is sometimes aggravated by the anesthetic, and likewise pulmonary infection.

7. In the South especially, where the gas can be administered by competent anesthetists, employing new and standard equipment, ethylene and oxygen anesthesia is destined to be, if it is not already, the first anesthetic of choice for inhalant narcosis.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Malta Fever in the United States, by C. W. Wainwright. Southern Medical Journal, December, 1929.

The author made an analysis of seventy-six cases of Malta fever occuring in the United States, in which twenty-five were melitensis infections and fifty-one were abortus infections. The melitensis infections occurred in a limited area, the Southwest, where goats are raised.

The Abortus infections were generally distributed throughout the United States. Occupation was of no great significance except in the melitensis infections, in which there was a history of close contact with goats. Insidious onset was the rule in both types of infection. There were no characteristic physical observations. Gastrointestinal infections were common in both; constipation was more frequent in the melitensis cases; orchitis was frequent in the melitensis cases. The organism was recovered from both the blood and urine more readily in the melitensis cases. Low counts or normal white counts were the rule, and in some cases there was a lymphocytosis. The melintensis cases were generally more typical and more severe than the abortus infections.

Tuberculosis in Guinea Pigs, by H. A. Reisman and A. B. Baylis. Journal Laboratory and Clinical Mdicine, December, 1929.

According to these authors, tuberculosis is quite prevalent in guinea pigs that are apparently normal. An intracutaneous tuberculin test reveals the presence of a tuberculosis lesion in guinea pigs. These animals injected with dead tubercle bacilli did not develop any sensitivity to tuberculin. Guinea-pigs may have a pre-existing tuberculosis focus similar to that induced by inoculation. Guinea-pigs of uncertain history should be tested with tuberculin before being employed for the inoculation diagnosis of tuberculosis and other laboratory experiments relative to tuberculosis.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Therapeutic Results in Psoriasis, by H. H. Hazen, M. D., Washington, D. C. In the Journal of the Southern Medical Association, October, 1929.

The author agrees that psoriasis is a common skin disease, chronic and difficult to handle. He reviews 167 consecutive private patients, 80 of whom were treated for a considerable length of time, and whose later condition was known. He is of the opinion that psoriasis is distinctly a disease of moods, and that that there were frequent periods of remission or exacerbation without known cause. In many individuals the disease has a distinct seasonal incidence. He treated his cases with x-ray to lesions, x-ray to the thymus, ultra-violet ray to lesions, as well as ointments to the lesions. He regulated the diet and used auto-serum, whole blood injections, vaccines, arsenic and combined treatments. He was of the opinion that psoriasis is a disease which shows spontaneous remission, and that one must be extremely careful about ones drawing deductions from improvement of any individual case. He did, however, seem to feel that x-ray, ultra-violet ray and some of the ointments were responsible for improvement, and on the whole x-ray and intravenous injection of typhoid vaccine seemed to be most effective.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

The Tetanoid Syndrome in Obstetrics, by E. C. Hartley, M. D., St. Paul, Minn. American Journal of Obstetrics and Gynecology, January, 1930.

The author has combined a group of symptoms commonly observed in pregnancy, which he has applied the term, "The Tetanoid Syndrome," which may be regarded as a tetanoid state due to a hypocalcemia, which in turn consequent upon an acute hypoparathyroidism, or a hypothyroidism, which may be relative and become apparent as the occasion demands it. He states that Falta and Myers have described tetany as follows:

Tetany is an abnormally increased condition of excitement of the nervous system, which is demonstrable in a heightened excitability of the motor, sensible, sensory and vegetative nerves, and under certain circumstances in paresthesias and bilateral intermittent, for the most part painful, spasms, with intact consciousness, or which becomes manifest through phenomena of irritation on the part of the vegetative nerves. To this may be added trophic and certain metabolic disorders. All of which are due to the inefficiency of the parathyroid gland.

This classical syndrome is directly related to tetany, and is manifested: 1. In many cases by aching and cramplike pains in the extremities. Formerly these cases were diagnosed as a neuralgia or neuritis of pregnancy. There may be also prickling sensation, numbness and slight paralysis of the member or members involved. 2. Insomnia and emotional instability which cannot be closely related to a true tetany, but which has been found in many cases. 3. Edema, which is probably due to angiospasm. Falta and Rudinger called attention to vasomotor disturbances in all cases of true tetany. Dermiography, a pudgy look about the face, complaints of congestion of the head, and moderate pallor was noted in many cases. 4. Paresthesias are very common in tetany; they constitute a part of the classical syndrome of that disease. De Lee in his discussion of neuritis says, "Not rarely pregnant women complain of numbness and pricking of the fingers, with lack of power in the hands, and examination shows the members to be puffy, slightly cyanosed, with diminished tactile sensibility, and occasionally tenderness over the ulnar nerve." 5. Cardiac disturbances, such as palpitation, increased rate, alternations of the heart sounds, have been observed in tetany. These likewise have been observed during this study. 6. Relative inertia of the uterus in labor and marked atony after delivery were striking features in this syndrome. Erdheim and Nuemman have observed the ineffectiveness of extraordinary amounts of pituitrin used in these cases.

It is interesting to note that Dragstedt has observed that parathyroidectomized dogs have a lowered resistance to histomine poisoning; Hofbrauer observed that histomine may be produced in the maternal body, and that its presence hinders the contractions of the uterus by being antagonistic to the pituitary secretions. 7. Blood calcium readings in these patients studied did not correspond to all clinical findings, however, in the more severe cases to be low. It is probable, however, that the serum calcium estimation does little more than form a partial criterion of mineral metabolism, and other minerals, notably phosphorus appears to be concerned, and the place of vitamin D deserves more consideration. He states that while Ergoesterol, the parent substance of Vitamin D is inert, that when it is exposed to ultra violet rays, it becomes a potent factor in calcium metabolism.

Treatment of these patients included such measures that would stimulate calcium metabolism and increase the amount of mineral in the body. The oral administration of calcium, the use of parathormone and irradiated Ergoesterol were used, Calcilact, and effervescent calcium lactate, with a dosage of 120 to 180 grains daily; parathormone injections from 30 to 40 units for 3 to 5-day interval; and irradiated Ergoesterol ,10 drops daily. He reports a series of cases that were improved when this line of treatment was carried out. And while it is only the beginning of a series of studies, he is quite sure that he has seen marked improvements.

The reviewer has been very much impressed with this syndrome, and while he has not carried out this line of treatment as stated above, he has seen apparent results from the use of parathyroid extract and calcium, and has seen improvement in cases suffering from one or more of the outstanding symptoms of this classical syndrome.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

Correction of Compressed Fractures of the Vertebrae. John Dunlop and Carl H. Parker. Journal A. M. A., Jan. 11, 1930.

Recently much interest has been aroused by papers upon this subject notibly that of Dr. Davis of Erie, Pennsylvania. The authors state that since 1927 they have been reducing these fractures without knowledge of Dr. Davis' work.

"The reduction is accomplished by hyperextension of the back while string traction and counter traction is applied to the body. The traction is obtained by two men pulling upward on sheets which are passed diagonally across the chest and under the arm on the opposite side. The counter traction being accomplished by two men pulling downward on the ankles."

The operator and his assistant toss the patient upward by means of a folded sheet passed under the patient at the site of fracture while strong traction is made longitudinally. A cast is then applied in full hyperextension.

Twenty-one cases are reported .

OPTHALMOLOGY

By Robert J. Warner, M.D.

Doctors Building, Nashville

Dendritic Keratitis Following Therapeutic Inoculation of Malaria. William C. Finnoff, M.D., D.Oph., F.A.C.S., Denver, Colo. American Journal of Ophthalmology, December, 1929.

The fact that malarial infection, intentionally produced in the treatment of neurosyphilis, may result in dendritic keratitis has not apparently been brought to the attention of the neurologists and other clinicians by whom this method is being applied. In two cases here recorded, the complication was definitely attributable to the malarial infection, and resulted in serious lowering of vision.

These cases represent a true dendritic keratitis due to malaria. In the first case it was associated with herpes of the nose, and the ocular process was undoubtedly herpetic in character. No report of similar cases associated with the malarial treatment for neurosyphilis was found in the literature. Since this treatment has offered good results in the hands of a number of competent neurologists and is becoming used more widely, we as ophthalmologists should take it upon ourselves to advise our colleagues of its possible danger to the eye.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Resuscitation of Asphyxiated New-Born Infants. Roland S. Cron, M.D. Amer. Jour. Dis. Children, January, 1930.

The practice of slapping newborn infants born asphyxiated in efforts to stimulate breathing is condemned along with plunging them into ice cold water, swinging by the feet through the air, dilating the sphincter and other rough procedures. The baby breathes in spite of these steps and not because of them. Such maneuvers may result in rupture of blood vessels or viscus and endanger the child's life. At birth the baby breathes if the blood carries proper stimulant to the respiratory center. Carbon dioxide is the element necessary to cause the respiratory center in the brain to function, and oxygen is needed to keep that center normal. The new-born does not breathe if these substances are not carried to the brain by the blood.

In attempting resuscitation the baby should be handled most gently in a room temperature approximating that from which he was delivered. The air passages should be cleared of mucus, amniotic fluid, etc. Carbon dioxide five per cent in oxygen should be administered.

Immediately after birth the infant should be suspended by the feet and the trachea and larynx gently milked toward the mouth. The tip of a rubber ear bulb syringe, with bulb compressed, is quickly inserted into the mouth and nares and mucus and other debris aspirated so as to clear the air passages. If available the McKesson infant inhalator may be applied to the baby's mouth and nose. This instrument has a tank of oxygen containing five per cent carbon dioxide, the flow of which is controlled by a needle valve. Where this apparatus is available its proper use has been most satisfactory.

When the inhalator is not to be had the author suggests that the physician's expired air contains twenty per cent oxygen and five per cent carbon dioxide and his breath may be used to stimulate respiration in these cases. A small catheter is guided into the trachea by the operator's right index finger. By gentle suction the air passage is cleared, the catheter is removed, cleansed of debris, and again inserted into the trachea. The physician then very gently puffs his breath through the catheter at the rate of forty to forty-five times per minute, thus simulating the normal respiratory rate of the new-born infant. The force to be used would be about the same force used in blowing small smoke rings, or with the lips pursed to whistle, the puff would be felt by the wet finger about four inches from the lips.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Malignant Lesions of the Gall-Bladder. Judd, E. Starr and Baumgartner, Conrad J. Archives of Internal Medicine, 44, 735-745, Nov., 1929.

The incidence of malignancy of the gall-bladder is about 0.5 per cent. It rarely occurs before the age of fifty, and women are affected about three times as commonly as men.

Although the symptoms of malignancy of the gall-bladder are not definite, about seventy per cent of patients have a long history of repeated gall-bladder attacks, followed by a short phrase characterized by constant pain, anorexia, vomiting and progressive weakness and loss of weight.

There is almost never an associated anaemia in malignancy of the gall-bladder. In about a sixth of the cases there is achlorhydria, and in the remaining cases the average free hydrochloric acidity is thirty-two, and the average total acidity, forty-eight.

Stones are an almost constantly associated condition in cases of malignancy disease of the gall-bladder, ninety-four per cent of gall-bladders having calculi.

The types of malignancy of the gall-bladder are adeno-carcinoma, squamous cell epithelioma and sarcoma. Adeno-carcinoma occurs most commonly. Squamous cells epithelioma occurs as a process of metaplasia, probably from long-continued irritation.

Acute Pancreatitis. An Analysis of Eighty-eight Cases with Especial Reference to Diagnosis. Linder, William and Morse, Louis J. Annals of Surgery, 90, pg. 357-366. September, 1929.

Acute pancreatitis can be diagnosed before opening the abdominal cavity. The conception that acute pancreatitis can be diagnosed only at necropsy, or at the operating table, is no longer tenable. The possibility of acute pancreatitis, if borne in mind whenever an acute upper abdominal mishap presents itself, offers no greater difficulty in diagnosis than any other acute surgical condition.

Acute pancreatitis is not a primary disease, but rather a sequela. Whether we favor one or the other hypothesis in its production, we must face the fact that biliary disease is usually the precursor. It is more than mere coincidence that Egdall found biliary calculi in fifty per cent of his cases and seventy-five per cent complained of gall-bladder symptomatology. As for the few cases in which no biliary pathological lesions of symptomatology were found, it is well to recall the work of Hess, who produced acute necrosis by tying the pancreatic ducts at the height of digestion, and that of Pratt, who did the same in fasting animals, with no necrosis resulting.

Females were affected in eighty-eight per cent of our cases. Our female-male ratio was the same in acute pancreatitis as in our gall-bladder disease.

Fifty per cent occurred in the fourth and fifth decades, the youngest was nineteen, the oldest seventy.

Previous gastro-intestinal disorders are of great significance. All but eight gave some history of dyspepsia; of these four had repeated alimentary disturbance for three to four weeks prior to admission. Fifty-three per cent gave a definite history of biliary disease.

Pancreatic symptomatology in its acute manifestation depends on the activities of trypsinogen into trypsin. Pancreatic cells through digestion liberate lipase circulate through lymph channels, but their products of incomplete digestion as well.

Symptoms are, therefore, due to local pancreatic irritation, as well as those due to the circulation of toxic products. Inflammation of the pancreas results in oedema and swelling of that organ. Stretching of the pancreatic capsule induces pain. Diaphragmatic excursion may be obstructed. Biliary drainage into the duodenum impeded. Pressure on the abdominal brain should be taken cognizance of in explaining acute pancreatic symptomatology.

Circulation of foreign protein and its products incomplete digestion may in part explain the severe toxaemia some of these patients present. Digestion of blood vessels contributes the heamorrhagic features to the picture. Inflammation of the peritoneum to the irritants circulating under its serosa depicts the reaction of this membrane, and finally, the whole picture en masse working simultaneously, presents a definite clinical entity that can be recognized.

Constant epigastric pain is most frequently encountered. Eighty-six of our series complained of epigastric pain, often discribed as splitting in character, as though something within were trying to force its way out. Some also complained of right hypochrondriac pain. Ten had persistent backache. Backache was troublesome in fifty-eight of our cases. Left hypochrondriac pain was present in thirty-seven cases.

Pain in acute pancreatitis is of intense severity. Frequently, morphia in repeated doses fails to alleviate it. It is quite interesting to note that patients often volunteer the information that a hypodermic failed to ease their discomfort, whereas, previously relief was immediate with one dose of morphia.

Vomiting is a very troublesome and persistent complaint. It is never progressive. Eighty-five of our eighty-eight vomited. Emesis is never faecal in character, and can usually be relieved by a single gastric lavage, thus differentiating it from acute intestinal obstruction situated high up.

Foreign protein injected into the circulation calls forth a peculiar train of symptoms which has been designated allergic. These at times predominate in acute pancreatitis. Shock, collapse, cyanosis, dyspnoea and in some instances dermatologic reactions occur. Exactly how much pressure on the semilunar ganglion adds to the picture it is difficult to say, but these patients when seen early present an asthenia peculiarly characteristic of pancreatic disease. Cyanosis may in part be due to diaphragmatic embarrassment. Forty per cent of our cases were cyanotic. Seventeen were in shock on admission.

Temperature per se aids us not at all in the diagnosis, for in twenty-nine cases it was normal. In but eight did it arise about 102 degrees Fahrenheit. Quite interesting, however, is the temperature-pulse ratio, for we observe that the pulse rises out of all proportion to the temperature elevation.

Icterus due to pressure of the pancreas on the ductus choledochus is never severe. Twenty-eight were jaundiced and five others had bile in the urine, notwithstanding the absence of icterus in the sclerae or skin.

Local peritonitis due to mechanical stretching of the pancreatic capsule by the oedema of that gland adds the local signs of tenderness to those due to the chemical irritant. Epigastric tenderness was present in sixty-six per cent of the cases and left costovertebral on thirty-two per cent.

Constipation, and not diarrhoea, is the rule. The latter condition when present depicts a late manifestation, and one in which considerable pancreatic tissue has been necrotized. Constipation is not complete; of value in differentiation from intestinal obstruction. The silent paretic belly of acute pancreatitis offers a marked contrast to the one of mechanical obstruction in intestinal obstruction.

The differential diagnosis of acute pancreatitis must be clearly analyzed because it simulates so many other upper abdominal entities. Acute cholecystitis, particularly the suppurative variety, requires careful consideration. This is especially true where impending perforation and localized peritonitis may be present. We are here aided by the presence of a palpable mass attaches itself to the lower border of the liver. Pear-shaped, globular, this mass denotes a distended gall-bladder due to cystic duct block. Irregularity of bogginess of this mass may be caused by an adherent omentum protecting an impending blowout or a perforated gall-bladder. Because of its superficiality, light palpation, by placing the palm of the hand on the abdomen with the patient breathing slowly and deeply, makes for easy disclosure of the mass. If an exudate extends into the subhepatic region, the patient frequently will limit perceptibly the respiratory excursions; abdominal breathing is lacking. Thoracic breathing is the rule. In these cases slight cyanosis of acute haemorrhagic pancreatitis.

Perforation of a disease infected gall-bladder into the free abdominal cavity, with resultant biliary peritonitis, produces shock which may well simulate the shock of acute pancreatitis, but no difficulty should be encountered in differentiating the two because of the preexisting gall-bladder story. Usually the patient had been confined to bed with an acutely distended cholecystitis, too frequently receiving so-called medical attention in the hope that the cystic block, which may be due to stone or tumefaction, will subside and reestablish drainage.

Erroneous is the contention that gall-bladders rarely perforate, for too often have such catastrophes resulted from procrastination. If the sudden onset of acute pancreatitis is borne in mind, together with the absence of the local findings above enumerated, differential diagnosis will not be so difficult.

Acute intestinal obstruction, may be difficult to differentiate. Although the shock encountered in the sudden snaring of a loop of gut by a band or aperture may be great, the abdominal findings are easily differentiated from acute pancreatitis by visible peristalsis early in the disease, progressive vomiting, a painless abdomen, the absence of left lumbar tenderness, and the absence of the malar flusn of acute pancreatitis.

Acute renal colic, particularly on the left side, is at times attended by extreme pain and shock. If there is absence of radiation down to the groin, acute hemorrhagic pancreatitis must be borne in mind. This acute renal colic may be due either to a stone or to pus. Pyuria aids greatly in differentiation. A sudden torsion of a ptotic kidney with strangulation of the renal pedicle may well simulate acute pancreatitis. Here the history of ptosis in a patient who has lost considerable weight, with a history of Dietl's crisis, and a sudden physical exertion, may be the exciting cause. The kidney is readily palpated and is found enlarged and tender, if it is found in the lumbar region, or it may have been displaced to the mid-abdomen, but it will be found movable and may be reposited in the lumbar fossa.

Tenderness in the left inguinal region, a definite Head's zone, is not at all infrequent in acute haemorrhagic pancreatitis, particularly if considerable haemorrhagic fluid is present in the peritoneal cavity.

Acute heamatogenous infection of carbuncles of the kidney at times call for differentiation. Here the antecedent history of some focal lesion, such as a furuncle, carbuncle, paronychia, or some upper respiratory infection, etc., with sudden onset in an otherwise healthy individual, of a chill, rise in temperature, tenderness in either lumbar region with lumbar spasticity with or without any urinary symptoms or findings, such as blood or pus, particularly if the anterior surface of the kidney is the site of adhesions to the parietal peritoneum, may be confused with acute heamorrhagic pancreatitis. The toxeamia, the shock, the flush parietic abdomen and the characteristic epigastric tenderness with radiation to the left, which are found in acute pancreatitis, are absent in this condition.

Perforated gastric or duodenal ulcer with their antecedent ulcer history, their board-like rigidity, and scaphoid appearance of the abdomen, may well be distinguished from the paretic abdomen, the absence of resistance felt in the mid-epigastrium with radiation to the left. The early signs of spreading general peritonitis, the presence of gas in the peritoneal cavity, elicited by the absence of liver dullness, the absenc of malar flush, the expiratory grunt, exclude the probability of acute haemorrhagic pancreatitis. Then again the ulcer patient depicts a countenance characteristic of stomach pathology. The long, thin, drawn, dyspeptic portraying chronic pain is a facies easily recognizable.

Cardiac and coronary disease require consideration. Careful cardiac examination is absolutely essential before any operative intervention is instituted, for the protean manifestations of cardiac disease may simulate many intra-abdominal catastrophes. Preeixsting cardiac history with tender liver due to right coronary closure, marked rigidity of the upper abdomen with extreme hypersensitiveness of the abdominal wall, frequently lead to correct diagnostication. Electrocardiograms are important adjuvants.

Perhaps to often do we err, but rather on the side of making the diagnosis of acute pancreatitis when such does not exist, but the knowledge that such an entity exists often leads to the correct diagnosis.

Complete exploration in many instances is interdicted because of the extreme gravity of the patient's condition, but knowldge of our findings, in so far as feasible, are here added, the better to understand the disease.

Biliary disease was a concomitant finding in eighty-four per cent. Calculi were found in fifty-four cases of those presenting gall-bladder pathology. In two cases, cholecystectomy had been previously performed. In thirteen no mention of gall-bladder exploration was made. Severe acute biliary disease was never encountered.

Interesting is the observation that the omentum in acute pancreatitis assumes a peculiar grayish-yellow, and may feel gritty. This finding, pointed out in 1915, leads to the exploration of the pancreas, thereby disclosing pathology otherwise unsuspected. This characteristic granular omentum was encountered in forty-three per cent of our cases. At times, this apron-like structure assumes such size as to allow of palpation before celiotomy.

The immediate treatment resolves itself into saving life. Relieve the pressure on the semilunar ganglion and common duct by opening the pancreatic. If the patient's condition warrants, the operation of choice, cholecystectomy, removes the source of infection. At times drainage of the gall-bladder must suffice to drain the pancreas.

Twenty-three of our patients succumbed. Our rather high mortality rate of twenty-six per cent compares favorably with all others. We must recall, however, that operation is being performed in a very serious complication of disease which if treated early is more amenable to recovery. Proper early treatment of biliary disease will decrease the mortality rate of acute pancreatitis. The time to intervene is when the disease is still limited to the gall-bladder.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxvill-

Operation on the Single Kidney Especially for Stone. Keyes, Dr. Ed. L., N. Y. (Jama, 1-18-30).

The author reports a series of six cases, of single kidney successfully operated on for stone and other conditions. A great degree of courage has been exhibited in the handling of these cases, yet judgment and life saving have proved the greater factor in his course.

One case was a decapsulation for acute suppurative nephritis, in which the function had become almost nil and the patient was uremic. There was an uneventful recovery.

The other five were stone cases, four of which were for anuria. The other was for persistent pain. The anuria had lasted for respectively, one, two, four, and six days. All having a high blood nitrogen and blood pressure. The general physical condition was good in all but one, who was a frail anemic youth. A nephrectomy was done before convalescence would take place. The others made uneventful recoveries on removal of the stones, except one case, which had to have three such operations in several years and another two.

He attributes his success partly to his technique, in which he does two things: 1. Leaving the pyelotomy incision unsutered and draining. 2. Always doing a decapsulation. Also he is very gentle in his handling of the kidney.

Stones in the Ureter. Herman Bumpus, M.D., F.A.C.S. Gresham Thompson, M.D., Rochester, Minn. (S. G. & O., Vol. L, Jan., 1930.)

A clinical study of 1001 cases of ureteral stone was made and their results recorded. Roughly summarized it is as follows:

As to symptoms, pain originating in the kidney region and radiating down the ureter was the outstanding one, and was found to rarely radiate to thigh or genitalia. It occurred in 634 cases. Reversed radiation occurred in thirty-seven cases. Epigastric pain was present in 162 cases, and nausea and vomiting in 304 cases. Marked frequency was present in 456 patients; 254 did not have urinary disturbances. A few cases with vague abdominal pain and frequency were diagnosed by x-ray. Gross hematuria occurred in 300 cases. Anuria occurred in twenty-seven cases, twenty-two of which was reflex in that it lasted only twenty-four hours.

Nothing was concluded in regard to the etiology. Due to the cooperation of the urologist and roentgenologist shadows of the stone were demonstrated in all except twenty-one cases or 2.1 per cent.

By cystoscopic examination definite obstruction to passage of catheter was found in 554 cases. Grating on catheter and transmitted to finger tips was demonstrated in 192 cases. The wax tip catheter was occasionally used as a confirmatory procedure and was found of value.

The chief aid to diagnosis was the inclusion of the shadow by the urographic medium.

In treatment the stone was passed in 146 cases following the first cystoscopic with the manipulation incident to passing a catheter for diagnosis. Manipulation was attempted in 274 other cases with passage of the stone in 202 of them. Stones were removed in eighty-five per cent of cases attempted by catheter manipulation. Sixty-three cases were surgically removed after failure at manipulation, also forty-nine of the cases removed by manipulation had to be nephrectomized on accaunt of kidney damage by stone. Six per cent of the cases in this series had recurrences.

The authors advise caution in the extent of manipulation interference because of the danger of snppurative pyelonephritis, and recommend leaving the catheter in the ureter to insure drainage and prevent edema and ascending infection.

Knox County—
Wood, W. P. I '68, '94.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII MARCH, 1930 No. 3

MALIGNANCY OF THE ORAL CAVITY*

C. M. HAMILTON, M.D., Nashville

MALIGNANCY of the oral cavity is a subject of much conjecture. Its gravity is such that it behooves every one to make some effort to check its occurrence and to promote early treatment. Inasmuch as the result of any method of eradication is inversely proportional to the extent and duration of the process, the importance of early treatment cannot be overemphasized. Time is often wasted by observers who use palliative measures without careful examination. Lesions in this location are usually painful and easily traumatized. This causes the patient to seek advice early in most instances. The majority of the unexplainable lesions that have existed as long as a month are potentially cancerous.

Sarcoma and basal cell epithelioma are extremely rare in the mouth. Basal cell epithelioma is found occasionally on the upper lip. Practically all of the malignant growths of the lower lip and intra-oral cavity are epidermoid carcinomas. The infiltrating type of epidermoid tumor presents a small epithelial lesion with an invading subepithelial base. The original process seems innocent from inspection. On the other hand a hard infiltration may be palpable. The degree of malignancy can be estimated by the difference in impression gained by visual and tactile sensations. Papillary epitheliomas are not so malignant as the infiltrating variety. They give the impression of being glued to the surface. There is no invasion in the early stage. It appears larger by vision than by palpation. The fast growing squamous cell epitheliomas feel much larger than they appear. Palpation is not employed freely enough in examination of these conditions.

Most of the labial epitheliomas are on the lower lip. Two distinct forms of epidermoid cancers are encountered. The infiltrating variety ordinarily occurs at the site of a long standing keratosis. It ulcerates and infiltrates slowly and appears more or less harmless. The invasion is peripheral and into the deep tissues. Its progress is deceptive and is likely to escape notice. The papillary form is a broad warty excrescence which spreads very rapidly over the surface. It is conspicuous and impressive. It soon covers most of the mucous membrane of the border of the lip and may extend to the cutaneous portion. It frequently follows a seborrheal cheilitis. Metastasis is much slower than in the infiltrating type.

There are also two main forms of cancer of the tongue. A rapidly growing tumor often appears at the site of irritation produced by a sharp irregular tooth or an ill-fitting plate. It soon ulcerates and lymphatic involvement is rapid. The vascularity, flexibility, and traumatic tendency facilitates early metastasis. The slower developing epitheliomas are usually engrafted upon a syphilitic or leukoplakic condition. A wider area of the tongue is involved. Multiple small lesions may fuse into one large thin superficial epithelioma. It is difficult to determine the extent of malignancy. The base of the lesion may be syphilitic and the superficial portion malignant. Metastasis is comparatively slow. This is due to the lack of blood supply caused by a local arteriosclerosis. This is especially true in the syphilitic cases.

---

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, February 11, 1930.

Transitional cell carcinoma develops occasionally in the glandular portion of the under surface of the tongue. It is the most rapidly growing carcinoma that occurs in the oral cavity. A polypoid epithelioma may result from malignant degeneration of a fibroma.

Two types of carcinoma attack the alveolar ridge. One springs from the epithelium of the tooth socket. It grows rapidly and soon invades the periosteum. The other form is papillary and does not attack the periosteum early.

Cancer of the floor of the mouth is rare. It is almost always an infiltrating epidermoid carcinoma. Its course is very rapid. This is one of the most dangerous carcinomas found in the intra-oral cavity. The papillary variety occurs infrequently. These neoplasms usually arise at the side of the frenum. The extension is downward into the musculature of the floor of the mouth. It may grow backward and upward into the tongue. The lymph drainage region is quickly disseminated. It may extend along the muscle attachments and invade the mandible.

Cancer of the buccal mucosa is very rare. It is usually squamous celled. That of the palate is also rare. It is frequently papillary and tends to invade the periosteum slowly.

Treatment of neoplasms of the lip and mouth require considerable precision. The plan of attack depends to a great extent upon the location, type of tumor, and duration. The rapidly growing, embryonic celled lesions respond to radiation better than the papillary tumors. Conversely, the radiosensitive tumors are not so suitable to surgical measures as the papillary growths. Judd, of the Mayo Clinic, an institution noted for its surgical accomplishments, admits that radiation offers more than surgery for metastatic lymph nodes in carcinoma grade 4.

Every case presents two problems: (1) the local lesion and (2) the lymph drainage areas. The local lesion can be removed by excision, cauterization, electrocoagulation, or radiation. Superficial cancers of the lip, tongue, and buccal mucosa respond to surface radiation followed by electrocoagulation. The radiation should be intense enough to destroy the growth, and the coagulation should be complete enough to reach every ramification. The dual procedure should be more effective than either method used singly. Radiation should be intense enough to destroy cells in the remotest portion. The reaction varies in different forms of malignancy. There is also some variation in the same types. Therefore, the maximum dosage of radiation is essential. It should be administered at the first application or series of applications. Large tumors probably yield best to radium implantation. The needles ought to be placed near the periphery, so that the greatest irradiation will be in the most active part of the tumor. Additional filtered surface radiation is also beneficial.

Removal by cauterization or electrocoagulation is usually sufficient in cancer of the alveolar ridge. Radium frequently produces an exposure of the bone. Periosteal involvement can be detected by radiographic examination. Radiation is not very effective in carcinoma of the bone. In case of involvement, excision followed by an application of radium in the wound and external radiation give the best results.

Epitheliomas of the roof of the mouth usually clear up following electrocoagulation and external radiation. In case of periosteal invasion a wide bony destruction is indicated. This can be done with cautery or by electrocoagulation.

Treatment of the lymph glands is probably more important than that of the primary neoplasm. This should be considered both from a preventive and a curative standpoint. No iron clad rule can be adopted. Every case is a law unto itself, depending upon the location, duration, size, type, and the existence of one or more metastatic nodes. The ideal time to treat malignancy is in the pre-metastatic period. Any destructive measure will suffice. Since the pre-metastatic period cannot be determined accurately, some glandular therapy is necessary. Bloc dissection was formerly routine. However, conservative methods have gradually gained favor. Many surgeons, including Crile, are more conservative in their surgical views than they were previously. Their dissections are not so extensive. The jugular node is usually involved first and it needs especial attention if dissection is the method of choice. External radiation is advocated by both the surgeon and the radiologist in all cases. The plan used at the Mayo Clinic is bloc dissection and external radiation in all cases except those of grade 4. At the Memorial Hospital, a more conservative attitude is assumed. Most of the hospital staff adhere to Ewing's theory of metastasis by embolism. It is Ewing's opinion that lymph glands serve as a barrier against metastasis and that they should be left intact. External radiation at the Memorial Hospital has prevented metastasis in 90 per cent of the cases that were free of palpable nodes at the time of admission. Radiation should be given to both sides of the neck. Additional therapy to the chin is desirable in cases of cancer of the lip.

A single metastatic node is easier to handle than multiple glands. An encapsulated node can be dealt with more effectively than a broken down node. Metastasis is usually confined to a single node or a few adjacent nodes in the beginning. Many authorities advocate removal of encapsulated glands supplemented by radium therapy in the wound and heavy external radiation. The combination seems to offer the most satisfactory results. Cases with inoperable metastasis should have palliative radiation.

The results of unselected cases varies from 15 to 60 per cent with various authorities. The percentage of cures is higher in selected cases. The best results are obtained in the lip cases. Cancer of the tongue and the floor of the mouth are the most unfavorable. Better results are accomplished in epitheliomas of the alveolar ridge and hard palate than in those of the soft palate and buccal mucosa.

Oral sepsis is a hindrance to treatment of intraoral malignancy. Infection causes a dilatation of the lymph channels which facilitates metastasis. Irritation incident to inflammation stimulates malignant growth. Preliminary oral prophylaxis usually is bad practice. The extraction of infected or sharp teeth may cause delay in treatment of cancer by producing complications. Nevertheless, the teeth should be cleaned, smoothed, and repaired as soon after treatment as the condition will permit.

Inasmuch as cancer of the oral cavity proves fatal in such a large percentage of cases, precautionary measures are of prime importance. Dentists and physicians should be alert to the malignant possibilities of precancerous lesions. Practically every oral cancer can be prevented by oral prophylaxis, care of sharp, irregular teeth, removal of keratoses, warts, fibromas, fissures and leukoplakia conditions and the discontinuance of the use of tobacco. Infection is a causative agent in many instances. Malignancy often follows a glossitis or a cheilitis. Pyorrheal pockets and pyogenic ulcerations may terminate in malignancy.

In conclusion, it is well to re-emphasize that cancer of the mouth is a curable disease. In order to obtain the best results it is necessary to start treatment early. It should be remembered that some of the most inconspicuous lesions are very dangerous. Palliation and insufficient treatment are worse than no treatment. The best results are not obtained by any one method. The proper combination of methods offers the most success. Cancer of the lip and intraoral cavity can be prevented in most instances by simple procedures.

"THE SIGNIFICANCE OF NEURITIC PAINS IN MIDDLE AGED AND ELDERLY PEOPLE"*

Whitman Rowland, M.D., Memphis, Internal Medicine

THE most frequent expression of body departure from normal, is pain. An individual presents himself for medical consultation. He states his chief complaint as pain and further elaborates this complaint by a description of its character and location. "Aching," "cramping,' "boring," "gripping," "stinging," etc., are frequent terms descriptive of unpleasant sensations located in various anatomical regions of the body. Certain types of pain, with definite radiation and location are characteristic symptoms of pathological changes, which we recognize as significant of a given disease. The agonizing, acute, upper right abdominal cramp radiating to the right shoulder, is seldom mistaken for other than what it most frequently is, gall-stones. On the other hand there is a heterogenous group of painful sensations, characterized by their indefiniteness of type and inaccuracy of localization to which the term "Neuritic Pain", has been given.

Not infrequently this type of pain is classified as Myalgic or Rheumatoid. Such indefinite aches and pains comprise a large percentage of complaints encountered among individuals seeking medical advice. Fortunately the greater percentage of them may be regarded as acute, temporary upsets of unknown etiology which may reasonably be expected to yield in a short period of time, to modern methods of physiotherapy, and the administration of purgatives and analgesics.

Those of a more persistent nature, producing a greater degree of discomfort and disability generally suggest focal infection as a cause and our efforts are directed toward locating the possible foci.

In younger individuals we may reasonably attribute the greater percentage of persistent Neuritic and Myalgic pains to focal infection. As age advances these indefinite disturbances of sensation assume a significance independent of focal infection and temporary functional upsets of unknown etiology.

In middle-aged and elderly people, not infrequently they are expressions of grave underlying systemic disease and while it is obviously impossible in the scope of this paper to discuss all of the diseases in which Neuritis or Myalgia are manifestations, I wish to bring to your attention some important, grave systemic disease entities in which the objective symptoms of vague and indefinite painful sensations may be erroneously interpreted as simple Neuritis or Myalgia. When such a condition as spondylitis is overlooked, the failure is not so grave, but when Pott's Disease or Diabetes Mellitus escapes detection, we have lost the opportunity to benefit our patient by the institution of early and appropriate treatment. One may be so unfortunate as to assure a patient that his condition is not serious when in reality disaster is impending.

In the selection then of only a few conditions for consideration, I am guided by the opinion that the recognition of possible serious, underlying conditions deserve primary consideration. Among these, those deserving of particular consideration because of the possibility of associated Neuritic pains, assuming the dominant role in the patient's consciousness of abnormality, are Diabetes Mellitus, Pernicious Anemia, Syphilis of the Heart and Aorta, Angina Pectoris, Tabes Dorsalis, Tuberculosis of the spine and cancer.

Neuralgia, numbness and tingling of general distribution with cramping in the muscles of the legs, attendant upon an existing arteriosclerosis, sometimes occur in Diabetes Mellitus. The peculiar susceptibility of individuals to pain and the acute consciousness of its existence, frequently prompts an individual to state his chief complaint as pain, while the classical symptoms of Diabetes Mellitus, thirst, frequency of urination and inordinate appetite are clouded and forgotten, due to the predominating consciousness of a body sensation of pain. A careful history combined with a few simple laboratory procedures, establishes the correct diagnosis.

---

*Read on May 11, 1929, before the West Tennessee Medical Association.

More and more we are beginning to recognize the frequency of nervous lesions in primary Addisonian or Pernicious Anemia. Neuritic pains are not uncommon and numbness and tingling are frequent. Lightning pains and girdle sensations simulating Tabes are not uncommon. Recently we are beginning to recognize a group in which definite nervous symptoms precede any evidence of anemia. A blood smear showing evidence of a primary anemia, together with neuritic symptoms; the demonstration of the absence of free hydrochloric acid in the stomach and recognition of the characteristic clinical picture establishes the diagnosis.

Syphilis of the heart and aorta is frequently attended by indiscriminate Neuritic pains. As a rule the area of distribution of the pains of angina and of aortic and periaortic disorders is over the chest and arm. The typical area of distribution of anginose pain is precordial, left upper thoracic and the area of distribution of the left ulna nerve. At times the pain may radiate to the corresponding area of the right side, the epigastrium, the side of the neck and the Nuchal region. Aortic Aneurism may cause Neuritic pressure pain, simulating the pains of true angina pectoris. All of us have, at some time, been confronted with the responsibility of reassuring the middle-aged individual complaining of precordial and chest pains or condemning him to early death from cardioaortic disease. The diagnosis of true angina is indeed, at times, difficult to make, but the possibility of this condition should ever be borne in mind in middle-aged individuals complaining of Neuritic, axillary chest and arm pains. Particularly is this true when careful examination reveals general arteriosclerosis, hypertension or the stigmata of syphilis, serological or clinical.

It is hardly necessary to mention the typical, acute, agonizing, lancinating, lightning pains of Tabes Dorsalis; frequently met with, it is in the large majority of instances easily recognized.

The pseudoneuralgia or Neuritis of Potts Disease should ever be borne in mind as a possible cause of lower extremity and chronic lumbar pain. An abscess pointing in the inguinal region, angulation of the spine and x-ray evidence of bony destruction, suffice to establish the diagnosis.

Most important of all is the recognition of the fact that malignancy may produce neuritic pains in any part of the body either through local metastatic lesions or by reason of the anatomical situation of the primary new growth. Axillary, intercostal and upper extremity, neuritic pain may be associated with Mediastinal tumors, particularly Hodgkin's disease and Lymphosarcoma and Metastatic lesions, the result of carcinoma of the breast.

Perhaps the most classical example of neuritis and neuritic pain is the symptom complex called Sciatica. The term is vaguely applied to a painful condition, involving the Sciatic nerve. Pain over the region of the distribution of the Sciatic nerve is a frequent complaint and regardless of the fact that primary neuritis of this nerve is very rare, it is not uncommon for clinicians to label the condition simple primary or idiopathic sciatica. In the larger percentage the condition is secondary to a process elsewhere.

Without attempting to discuss all the possible causes of sciatic pain, I wish to call your attention to the significance of sciatica occurring in an individual of the cancer age. Too frequently a cursory examination is made and the underlying cause of the condition completely unsuspected.

Carcinoma of the uterus, metastatic malignancy in the lower spine; solid ovarian tumors, carcinoma of the prostrate, cancer of the rectum and bladder are not infrequent causes. Bilateral sciatica is so rare, it is well to assume its nonoccurrence.

A few years ago two cases presenting the symptoms of bilateral sciatica came under my observation. Both of these patients had received supposedly thorough investigation by men of unquestioned ability. Each detailed a long history of suffering and each had received symptomatic and orthopedic treatment. Both were victims of carcinoma of the prostrate with metastasis into the heads of the femura. While many causes of a nonmalignant nature may be and frequently are responsible for sciatic neuritis, I wish to stress the importance of malignancy as a factor in the production of lower extremity pain in individuals in middle or elderly life.

A complete discussion of all the grave organic conditions manifesting neuritic pain as a symptom would be monographic and far beyond the scope of an essay. Recognizing that I have discussed the subject only in a superficial manner, I have at least, endeavored to bring to your attention a few of the grave systemic diseases occurring primarily in those of middle and elderly life, the true nature of which may be obscured by the presenting symptom, Neuritic pain.

The Program Will Be Mailed Soon

THE STATE MEETING

Nashville, April 8-9-10

PLAN TO BE PRESENT

Centennial Meeting Unexcelled Papers

Interesting Exhibits

PRECORDIAL PAIN*

W. T. DESAUTELLE, A.B., M.D., F.A.C.P., Knoxville

PRECORDIAL pain suggests most readily disease of the heart and aorta, but this paper is a discussion of how to decide whether or not pain in the chest is due to organic disease of these organs. Therefore, it will be necessary to examine some of the other causes of pains in the chest simulating heart disease such as (1) organic disease of the abdominal organs, and (2) functional disturbances of the cordiovascular apparatus.

Patients will describe precordial pain as acute, burning, severe aching, boring, sharp shooting, lancinating, gripping pain, or may complain of a sensation of pressure, dull heavy weight, tight constricting and vice-like feeling behind the breast bone. No one of these symptoms are sufficiently characteristic to indicate the affected organ which may produce them, and in order to minimize diagnostic errors it is necessary to examine the history and the patient most carefully. A burning sensation suggests readily enough a hyperacid condition of the stomach, but this complaint is not nearly as common in these disturbances as might be expected. Indeed more persons suffering with excessive acid gastric secretion will complain of an aching, boring or hunger pain and this not infrequently in the lower portion of the precordium or about the apex region of the heart. It is probably caused by the regurgitation of acid contents of the stomach into the lower end of the oesophagus. The disorder may come on quite suddenly and prevent the individual from taking a deep breath. It may last but momentarily only to recur in a few moments, or may persist for many hours. Sometimes the pain is accompanied by severe palpitations which lead the patient to believe that his symptoms indicate heart disease and should he be out of condition and dyspnoeic it may indeed be difficult to decide that the attacks of precordial pain are of gastric and not cardiac origin.

Fatty, fibroid, or tobacco hearts are the most difficult to exclude. Gastric analyses, the use of diets and alkalies, and the electrocardiogram will be necessary to differentiate them. Even then there may be a reasonable doubt as in the case of Mr. D., a salesman, aged 47, who six weeks previous to examination had a numbness and tingling in the left hand and arm which was said to be due to a blood pressure of 180 mm. Hg. A month later for no reason at all he was suddenly seized with a choking, smothering, raw, sore sensation behind the sternum and an aching over his heart. It was difficult for him to get his breath, perspiration drenched his clothes, and he felt as if he were going to die. In five minutes these ill feelings passed, to be followed later by several similar attacks. One such lasted an hour and a half. They continued to occur at intervals of two or three days, to a week. Sometimes the seizure appeared about an hour after a meal, but they also came on at other times. Frequently the sensation appeared while he was lying down. He noticed there was a fullness in the stomach region during the choking periods and further observed several quick beats of the heart and some missed beats. Five years ago the patient had a similar illness which came on after having walked ten miles, eaten a heavy supper, and run to catch a train. Next morning the patient carried a bucket of coal from his basement which effort caused a prompt reappearance of the symptoms. Consulting his physician he was informed that he had a very serious heart disease and was strongly advised to avoid all exercise, and especially warned against climbing stairs. Should it be necessary to ascend a flight of stairs he was instructed to sit down on the first step and raise himself backwards up each step until he had reached the top. Although Mr. D. never followed these instructions he was quite deeply impressed with the seriousness of his heart disease. Thorough physical and laboratory examination did not reveal any serious defects. The missed pulse beats were due to Sino-auricular block and extra systoles, the stomach contents were normal, the arteries and blood pressure were not affected. In relating his history this man reported having passed some tarry stools three days before he had presented himself. Careful questioning revealed that many of these attacks came on an hour to an hour and a half after meals. He smoked 25 cigarettes a day. Reassurance and sedatives did not relieve his condition appreciably, and on the strength of his tarry stool and pain occurring about one and one-half hours after a meal he was given a diet and powder for duodenal ulcer. This gave prompt relief from the choking, smothering and precordial aching, but the Sino-auricular block and occasional extra systole still persist and five months after having instituted this treatment I am not yet certain that he may not have some myocardial disease.

---

*Read before the East Tennessee Medical Association, Tate Springs, Tennessee, May 9-10, 1929.

On the other hand these cases of precordial pain due to gastrointestinal disease are not as a rule so difficult to determine, providing adequate investigation be made to find them. There was the case of a young man, A. C. G., age 26, who complained of heart pounding, a tight sensation behind the sternum, skipped beats of the heart with indigestion and an overindulgence in tobacco. He smoked his pipe from morning until night and several times each day chewed tobacco as he smoked. One might naturally surmise that his symptoms were due to a tobacco heart and indeed it is a wonder they were not. However, in the course of a routine examination it was revealed that he had a free hydrochloric acid of 55 and a total acidity of 84 in his gastric contents. An appropriate diet with alkaline powders remedied the condition in spite of the fact that he did not stop smoking.

Duodenal ulcer, gastric ulcer and gallstones not infrequently will bring on precordial pains associated with gas, eructation, and vomiting, but these symptoms occur in angina pectoris and a thorough investigation will be required to differentiate the two conditions to avoid the embarrassment of recommending an unnecessary laparotomy.

Diseased conditions low down in the abdomen may on occasion produce symptoms so nearly typical of heart disease as to confuse anyone. Mrs. P., on whom a cordotomy had been performed several weeks previously to relieve the pains of tabes dorsalis awoke one morning at four o'clock with an excrutiating pain in the precordial region associated with sweating, pallor, rapid heart, soft, collapsible pulse, and extreme prostration. There was much vomiting of food and bile although she complained of no pains in her abdomen. This woman cried and moaned continuously with pain. A short time before the attack she had had a considerable amount of pus in her urine, which under appropriate treatment had nearly disappeared. The abdominal wall may have been somewhat distended but this was not pronounced. There was no abdominal tenderness, rigidity or visible peristaltic waves. She did not resent rather extensive palpation of the abdomen. Her bowels had not moved for four days, but this is a common occurrence following cordotomy. The temperature was subnormal, the leucocytes only slightly above normal. Here indeed was a dilemna. A patient known to have syphilis suddenly is seized with unbearable precordial pain, associated with rapid heart, cyanosis, etc., all of which strongly suggested a coronary occlusion. The excessive vomiting raised the question of an abdominal accident and from the severity of her symptoms it was evident that if they were due to a gastrointestinal condition, delay would be disastrous. On the other hand if the symptoms were the result of a coronary occlusion any anesthetic would certainly be fatal. However, the question of occlusion could be determined by means of the electrocardiograph and as one was available a tracing was made which showed a perfectly normal curve with only a tachycardia thus ruling out the heart. In a few hours the leucocytes had risen to 21,000 and operation revealed a volvulus which was relieved and the patient made an uneventful recovery.

Neurotic individuals not infrequently complain of symptoms identical with those of angina pectoris and indeed may relate such an accurate account of their ailment as to mislead one entirely. This type of patient requires the physician to make a diligent search for pathology with a careful historical and physical study of the person to correctly classify her condition. I used the feminine pronoun purposely since pseudo angina is found by far more often in women than in men. A great deal of the true nature of this condition may be learned by seeing a patient in an attack. The general attitude of a person suffering with true angina pectoris is probably one of the most characteristic features of the disease. "While most patients with hysterical or neurotic disturbances are voluble, throw themselves about the bed and insist on attention from the bystanders, an individual with true angina remains perfectly silent and still" and presents "the anxiety, the terror which is so characteristic and almost invariably present during the attack, quite independent of the knowledge of the patient or even of his desire to live." What a marked contrast to the patient with an anxiety neurosis who cries out with her symptoms, begs her attendants to help, walks back and forth in the room wringing her hands and frequently prays vociferously. No doubt she is in great distress as was a Mrs. M., who recently sat crying in my examining room fearfully awaiting death to overtake her. Three months before she had suffered a severe cold shortly after which there developed attacks of dryness of the mouth and throat, which did not disturb her greatly until they were associated with a choky, smothering feeling behind the sternum and a full, constricted sensation about her heart pushing towards the throat. Then she discovered that it was impossible to take a deep breath and the fear of death possessed her. These attacks returned every afternoon lasting longer each time, often attended by rapid beating of the heart. One morning she awoke with a numb sensation in her left arm and related that her eyelids were puffy, her fingers swollen. The train of symptoms to her mind was a complete picture of the last stages of heart failure. Thorough history, physical, and laboratory examination showed no evidence of any diseased condition. Mrs. M. was then reassured as to her condition, a mild sedative given and in two months there have been no recurrences of the dreaded angina. Other cases may not be as easy to differentiate as the preceding. Inability to relieve the distress of the pseudo angina patient with nitrites is considered strong evidence against the condition being true angina pectoris. Another differentiating point is the inability to reproduce the pain by exercise.

Effort syndrome, Disordered Action of the Heart or Neurocirculatory Asthenia although usually thought of in association with wars, nevertheless does occur in civil life. The strenuous life of a soldier would naturally bring out weaknesses otherwise unsuspected in persons apparently normal. During the recent World War considerable numbers were sent back from the front with the condition termed "effort syndrome". It is characterized by breathlessness on light exercise, easy fatigability, and precordial pain. At least half of the cases reviewed by Sir Thomas Lewis showed this symptom which was most often characterized as an ache or a feeling of soreness, sometimes as a stabbing sensation, and nearly always increased by exercise. The great majority of patients suffering with "effort syndrome" demonstrated that as far as the circulatory apparatus is concerned the condition is functional.

Precordial pain occurs as one of the chief manifestations of the so-called toxic angina. Tobacco is the most important causative agent and is seen most frequently. It produces no changes in the heart muscle, coronaries, or aorta. Nevertheless, there are many instances of tobacco angina which are very distressing, but a patient with true toxic angina does not die of it and almost without exception, giving up of the weed, is followed promptly by permanent relief from such attacks. No such happy results ever follow in true angina. Coffee and tea angina are mentioned by all writers on this subject and although coffee angina is much more frequent in advertising literature than in medical reports, still it is said to exist.

"Precordial pain is a common accompaniment of angina pectoris, aortitis, aneurysm, aortic insufficiency, myocarditis and cardiac dilatation." The pains of aortic aneurysm as a rule are constant in type, of a dull boring, aching nature, and with any degree of care should never be misleading. Of the valvular heart lesions aortic insufficiency is the one which in the greatest number of instances gives rise to pain in the precordium. At times it may be exceptionally severe producing a picture in most respects quite similar to true angina pectoris. Affections of the other heart valves are rarely accompanied by pain.

If a man who has been run down from sedentary work and mental strain, who is out of condition, flabby, so to speak, takes a holiday and attempts the ascent of a mountain, LeConte for instance, or engages in some violent form of exercise, such as a game of baseball, his heart is very liable to dilate under the strain. The outstanding indications of such occurrence will be a feeling of pain, distress, and discomfort in the region of the heart, accompanied by dyspnoea and palpitation. Examination will reveal a greatly dilated heart, the outcome of which may be similar to that of an unfortunate woman who actually tried to climb LeConte against the orders of her doctor. She suffered an agonizing pain in the sternal region, dyspnoea, palpitation, an enormous enlargement of the heart and after fourteen days of unbearable distress died.

The mere mention of precordial pain somehow seems instantly to conjure up the clinical picture of angina pectoris—the most outstanding symptom of which is pain of a most agonizing and terrifying nature. As a result of more extensive clinical and pathological studies of the heart I believe it is obvious to all of us "that angina pectoris is not a disease entity but rather a symptom complex caused by at least several different pathological states and that it is not a disease in any sense of the word, but merely a symptomatic picture. The condition is always a serious one, one in which great disability and frequently death occur." The idea that there are cases of angina, even fatal ones, in which no pathology of the circulatory tract can be demonstrated, is subject to considerable skepticism at present.

It is rather generally agreed now that the typical picture of angina pectoris may be produced by one of three frequent lesions, (1) disease of the coronary vessels, (2) aortic disease, and (3) myocardial disease.

"No doubt the common lesion of the coronary vessels is an endarteritis which produces nodal strictures of the lumen. This is probably associated with a certain degree of spasm during the attack. Ordinary arteriosclerosis of the coronaries is also a frequent change." This may occur as part of a generalized arteriosclerosis or it may be present to a great extent in the vessels of the heart with but little involvement outside of this region. When the coronary system is injected with an opaque substance and x-rayed, the picture of a sclerosed system certainly opens one's eyes in regard to the ease with which an obstruction to the blood flow could take place. The vessels appear more like the branching twigs of a tree with sharp angles instead of curves. The blood actually must flow around a sharp corner, or it is noted that the lumen is sharply constricted over short distances. On opening these coronaries they are found to be lined with calcified plaques presenting rough surfaces, a state which as you know encourages the formation of thrombi, and also in the presence of such dense thickening of the arterial walls it is obvious that nutrition of the muscle walls must be greatly impaired. Various degrees of these scleroses exist and embolism, partial or total, brings about anginal attacks with the subsequent typical clinical picture of coronary embolism, thrombosis, or cardiac infarction such as occurred just recently in a man aged 40, who was taken suddenly ill while having a bowel movement. He began to vomit, suffered a terrible aching, suffocating pain in his precordial region, and collapsed. Perspiration burst out all over his body. He experienced a feeling of impending disaster. The vomiting continued for nearly twenty-four hours. Shortly after being sent to the hospital his temperature, which had been subnormal, rose to 101. During the ten days since his admission to the hospital the temperature had varied daily from 99 to 101. At the time of the examination the pulse was 120, weak and collapsible. It had varied from 104 to 120 since entrance. One week before the onset this man stated that he had experienced an aching behind the sternum whenever he tried to walk the least bit fast. Two years previously there had been a similar attack much shorter and milder. I saw this patient with Dr. S. H. Hodge ten days after the beginning of his severe seizure. The facial aspect was striking, a look of anxiety, almost terror. For ten days the pain had not been entirely relieved and at the time of examination the sweat flowed so profusely as to require repeated drying of the chest with a towel. The heart was found to be greatly enlarged. No thrills or shocks could be felt over the precordium. On auscultation a to and fro soft-blowing murmur could be heard at the apex. Along the left sternal border a systolic blowing murmur was noted and a similar one over the tricuspid area. In a third left interspace 4.5 centimeters from the midsternal line I heard a harsh to and fro sound—a friction rub which was very loud on inspiration. The pulmonic second sound was much greater than the aortic second sound. No moisture could be made out in the lungs. Pressure over the liver revealed great tenderness, but the edge was not definitely felt probably owing to the fact that the man was a very large individual who weighed 245 pounds. There was only the very slightest pitting on pressure of the ankles or dependent portions of the body. The patient stated that the extremities never had shown any marked swelling although they would seem to be swollen in the mornings when he awoke, nevertheless it became necessary later in the day to relace the shoes as they became loosened. Forty-eight hours after the onset, the white blood cells numbered 13,250 with 82 per cent polynuclear cells and the next day the white blood cells rose to 26,250 with 78 per cent polynuclear cells. This was about five days after the onset of the symptoms, and then for the first time a friction rub was made out over the precordium. This case is a classical, clinical picture of coronary embolism with cardiac infarction. In this instance the thrombosis has taken place in a case of angina which had been of about ten days standing before the occlusion resulted. Therefore it is more the result than the cause. It is interesting to note in this case the type of pain complained of. The distress appearing on exercise as well as that present after the seizure was a dull aching behind the middle of the sternum. This continued for twelve days after admission to the hospital when he suddenly suffered a second attack of greater severity than the first, but on this occasion the pain was felt greatest in the left shoulder and down the inner surface of the left arm, further evidence of a coronary affection.

There are many cases of angina pectoris in which no changes can be demonstrated in the coronaries, and in which the determining focus seems to be situated in the aorta. Clinically certain symptoms may be helpful in distinguishing the two though no hard and fast rule can be made. "In the cases of coronary origin the pain reflection is more often down the arm, whereas in those instances which develop as a result of aortic lesions, the pain reflection is most commonly up into the neck, or it is located in the manubrium sterni."

The pathology most commonly seen in instances of precordial pain or angina pectoris which arise from aortic disease is located in the conus arteriosus and in many there is dilatation of the sinuses of Valsalva. As the result of subendothelial fibrosis the endothelial layer of the aorta about the mouths of the coronary vessels and the openings of the vasa vasorum is thrown into folds which under certain conditions offer obstruction to the blood flow into the coronary trunks, thus producing a coronary occlusion or asphyxia. Extensive disease of the base of the aorta involving the mouths of the coronaries is a frequent observation at autopsies, often when arteriosclerosis is not suspected. These lesions may consist of simple aortitis, round celled infiltration about the vasa vasorum, strictures of cicatrization, large calcified areas and atheromatous plaques.

Myocardial disease is the third lesion which commonly causes angina pectoris. According to Harlow Brooks there may perhaps be some minor deviations from the classical, clinical picture of those cases of angina which develop from myocardial disease. "Thus, for example, in these cases as a rule pain is not reflected characteristically into the arm and shoulder but is more likely to be described as precordial in character, a dull aching pain usually of more constant duration than in either of the other forms, and as a rule it is more invariably developed as a result of physical stress. Unlike the other anatomical types, it is likely to be further stamped by the appearance of the symptom of dyspnoea, and oedema may also accompany it. The pathological lesion in the myocardial type is quite variable depending on the origin of the defect and its chief point of location. It appears in the acute carditis of rheumatic fever and is to be expected in diphtheria, scarlet fever, or other severe infections such as typhoid, pneumonia and particularly influenza. It is seen as a result of the inflammatory and degenerative process in syphilis, late in the thyroid heart in which brown atrophy has developed or in any disease capable of setting up either a myocarditis or a myocardial degeneration. It is most commonly seen naturally enough in cases of fibroid heart from any cause whatsoever.

From this brief survey of the possible origin of precordial pain it is very evident that the cause may arise from a variety of sources. Accordingly patients presenting themselves with this complaint should be approached by the examiner with an open mind and be given the benefit of a careful historical, physical, laboratory, and electrocardiographic investigation in order to correctly determine the underlying pathology of their symptoms. There can be no question as to the high value of the electrocardiogram in the diagnosis of angina pectoris when it furnishes positive evidence. For instance, Mr. K., age 48, factory superintendent, while at work was suddenly seized with a severe pain behind the sternum and a sense of suffocation. The agony became so great that the patient collapsed and was taken home in a car. Great beads of sweat popped out on his face and there was marked pallor and cyanosis. When examined in a few hours after its onset his pulse was rapid and collapsible, and sometime later a slight fever was noted with a moderate rise in the leucocytes and perhaps a faint friction rub over the precordium. The electrocardiogram furnished a conclusive bit of evidence to clinch the diagnosis of coronary obstruction.

The tracing showed in lead I the T wave arising from the descending limb of the R wave above the isoelectric line, with an upward convexity, and inverted. In leads II and III although not inverted, the T wave came off of the S wave in each instance above the isoelectric line. These features of the T wave are generally regarded as evidence of coronary obstruction.

BIBLIOGRAPHY

Anderson, J. P.—Coronary Thrombosis—Annals of Internal Medicine, Vol. II, page 248.

Blake, A. J. Jex—Pain in the Chest—Index of Differential Diagnosis, French—1928.

Brooks, Harlow—Anginia Pectoris—Index of Differential Diagnosis, French—1928.

Brooks, Harlow—Concerning Certain Phases of Angina Pectoris—International Clinics, Vol. IV, 1928.

Coombs, Carey—Angina Pectoris—Index of Differential Diagnosis, French—1928.

Eggleston, Cary—Coronary Occlusion—Text-Book of Medicine—Cecil—1927, page 1022.

French, Herbert—Heartburn, Diseases of the Myocardium and Pericardium, Index of Differential Diagnosis, French—1928.

James, Henry—Symptomatic Disorders of the Heart—Text-Book of Medicine—Cecil, 1927, page 982.

Kahn, Morris H., and Barsky, Joseph—Angina Pectoris—A Clinical Analysis of Two Hundred Cases—Annals of Internal Medicine, Vol. II, page 401.

Keefer, Chester S., and Kisnik, William H.—Angina Pectoris: A Syndrome Caused by Anoxemia of the Myocardium—Archives of Internal Medicine, Vol. IV, page 769.

Levy, Robert T.—Cardiac Pain—A Consideration of its Nosology and Clinical Associations—The American Heart Journal, Vol. IV, page 377.

Lewis, Thomas—The Soldier's Heart and the Effort Syndrome—1920.

MacKenzie, Sir James—Chronic Diseases of the Heart—Oxford Medicine, Vol. II, page 387.

Otto, Harold L.—The Effect of Obstruction of Coronary Arteries Upon the T-wave of the Electrocardiogram—The American Heart Journal, Vol. IV, page 346.

Willius, F. A.—Clinical Electrocardiograms—1929.

Order Blank for Space in Professional Directory

To Tennessee State Medical Association,
510 Doctors' Building, Nashville, Tennessee.

Name ____ M.D.

Specialty ____

Office address ____

City ____

Bill me $4.50 quarterly for one-tenth page inserted twelve times.

The Directory will be classified under the proper general heading when sufficient number of spaces under each heading have been taken.

EROSION OF THE CERVIX*

JOHN C. BURCH, M.D., Nashville

I HAVE chosen the subject of cervical erosion today on account of its practical significance to us as practitioners of medicine. It is frequently found as the source of leucorrheal discharge, is frequently the persistent focus of gonorrhea and is the most frequent precancerous lesions of the entire female genitalia. Since gonorrhea is the most frequent disease affecting mankind and cancer is mankind's greatest scourge, the importance of cervical erosion from the standpoint of public health and preventive medicine is of enormous importance.

The eroded cervix, when exposed with a speculum, presents a red, apparently inflamed area surrounding the external os. This is frequently covered with a mucoid or muco purylent discharge. There may be numerous small cysts in the cervix about the size of a buckshot and of a bluish color or in other cases the red area may have a papillary appearance and suggest cancer. Erosions bleed easily to the touch, but not so easily or profusely as cancer. An erosion is never friable, and cancer is frequently friable. In the differential diagnosis beside cancer, tuberculosis and syphillis are to be thought of. These two diseases in our experience are extremely rare, and extremely hard to diagnose from their gross appearance. Biopsy and dark field are usually needed to prove their existence.

The pathology of the disease is very interesting and here as in all other fields of medicine is the key to treatment and prognosis. The essential change is the presence of columnar cervical epithelium around the external os and not of stratified squamous epithelium. This may be the result of either congenital or acquired causes.

In the foetus at birth in 33 per cent the columnar cervical epithelium extends beyond the external os and the persistence of this epithelium is the reason for the so-called congenital erosion. It is a frequent source of virginal leucorrhea. The acquired type is always the result of a loss of tissue and this loss of tissue may result from inflammation or trauma.

When the normal cervix becomes infected hyperenia results, there is glandular hypertrophy and hypersecretion.

The swollen mucous membrane tends to bulge out of the external os, it is seeking room for expansion. The excessive secretion pours into the vagina and is constantly flowing over the squamous epithelium of the cervix. This becomes devitalized by the change from the acid vaginal secretion to the alkaline of the cervical discharge, is macerated and sloughs away. This leaves a raw area, but it is not for long. The columnar epithelium grows out and covers this defect, and we have the transition from columnar to squamous complete. This unfortunately is not the end of the process. It continues to grow and forms glands which are often deep and ramifying. The connective tissue under the epithelium proliferates and pushes the epithelium into the vagina in the form of papillæ, the so-called papillary erosion.

This replacement of squamous epithelium by columnar epithelium with the formation of glands and papillæ is the end of the first stage of the process.

The second stage or the stage of attempted healing results when the acute symptoms subside and the vaginal epithelium grows over the columnar and replaces it. The neck of some of the glands may become closed and retention cysts develop, in others the squamous epithelium even trys to grow down into the glands, but try as it will it can not usually obliterate these glands and they persist in a chronicly infected state.

In the lacerations of child birth the sequence of events is different, but the end result is frequently the same as described above. These misplaced cervical glands are an ideal habitat for the gonoccus and the chronic infection and irritation in a tissue such as the cervix frequently leads to cancer.

---

*Read before Middle Tennessee Medical Association.

The treatment is very varied and almost all types of local applications have been tried. Tampons saturated with various medicament and suppositories are equally ineffective. Douches are only cleansing and in no way curative. The treatment in mild cases is easily carried out in the office.

The patient is placed in the lithotomy position and the cervix exposed with specula. All mucous and secretions are removed. Then with a very fine cautery several radial incisions about one-eighth inch in depth are made. These radiate from the external os like the spokes of a wheel. All visible cysts are punctured. The treatment is repeated at weekly intervals until the entire cervix is covered.

Anaesthesia is not required if a fine cautery is used, if the larger blades are used the area to be cauterized can quite easily be injected with one per cent novocaine.

After each stroke the blade of the cautery should be withdrawn from the vagina as otherwise the women complain of the burning. The smell of mucous and of burning flesh is disagreeable and for this reason the window should be slightly open. The patients should be warned at first there may be an increase in the discharge, but that later it will decrease. In four days to fourteen days slight bleeding may result when the slough comes away.

This method of treatment is quite satisfactory but in the more severe cases, operative interference may be required.

In conclusion:

1. Cervical erosion is important from a prophylactic and practical standpoint.
2. The chief change is in the replacement of the squamous epithelium around the external os by columnar.
3. Chief symptom is leucorrhea.
4. The main characteristic is chronicity.
5. The cautery is the best treatment.

BIBLIOGRAPHY

Annals of Surgery, 1920.
American Journal of Surgery, 1917.
Jr. A. M. A., Nov. 27, 1926.
Zentralblatt feu Gynakologie, year 51, No. 2. Pub. Sat. Jan. 8, 1927.

The Headquarters Hotel for the Centennial Celebration will be

HOTEL HERMITAGE

Make your reservations now

HYPOTENSION*

J. A. McCULLOCH, M.D., Maryville, Tenn.

THE condition recognized as hypotension has never received the attention which it deserves. This is in direct contrast to the opposite clinical condition known as hypertension.

In explanation of this fact it may be stated that high blood pressure with its vascular and renal pathological sequele has been recognized as being responsible for much fatality, whereas hypotension does not bear this reputation, at least to such an extent.

However, the subject is of sufficient importance to justify more study and attention, since there is always the possibility of the presence of some serious pathological condition with which it may be associated.

As a definition for hypotension it may be stated that it is a state of blood pressure lower than the normal expected for that individual person. In other words a patient may be said to be hypotensive when compared to his own expected normal reading.

There is no general agreement among the authorities as to the levels of blood pressure, and in fact this question must necessarily be somewhat arbitrarily agreed upon. However, it appears that a majority of the authorities have placed hypotension at 110 mm. Systolic.

It is well known that the normal blood pressure is maintained by a balance of four important factors, these being the power of the heart and its output per beat, the condition of the blood vessels, the peripheral resistance to the blood stream, and the volume of the blood itself. These may be influenced by a number of conditions or circumstances.

Hypotension may be properly classified as a symptom instead of a disease, and it may also be stated that its presence is not always indicative of a diseased condition. However, when present, there is sufficient reason to point to the possibility of some underlying pathological condition requiring serious attention.

As an exception to what has been stated it may be said that hypotension is compatible with good health in certain individuals, but these are the exceptions. It may be well to add just here that the statistics of life insurance companies indicate that low blood pressure in those past middle life is "the best criterion we possess that the individual will live beyond his normal expectancy."

While these statements and statistics have been substantiated by the admission of those in position to observe these facts, yet it should not be taken for granted that low blood pressure is to be ignored. It is an abnormality, and as such deserves consideration.

Low blood pressure may be either acute or chronic. It may be temporary or it may be constant. Anaphylactic, anesthetic, and traumatic shock almost invariably produce acute hypotension, and it may be a symptom of certain drug intoxications. Chronic or persistent hypotension is noted in association with certain chronic diseases and infections. Certain disturbances of the endocrine glands produce low blood pressure. Many other pathological conditions also are a factor in the production of this condition, but attention is called to the fact that when this condition does occur one or more of the factors necessary for the maintenance of normal blood pressure must necessarily be involved.

It is perhaps well to state just here that, in many hypotensive states, we have no adequate explanation. Certain diseases of the cardiovascular system, such as myocardial degeneration, would appear to be more or less directly responsible for this condition. It has been demonstrated that the element of greatest significance is peripheral relaxation. The loss of vasomotor control, and the presence of certain nervous and infectious diseases illustrate this fact. A careful study of hypotensive cases shows that most of them have associated complaints or diseases accounting for this condition. Among these may be mentioned tuberculosis, impaired myocardial disorders, post-infective states, nervous disorders, constitutional inferiorities, Addison's Disease, certain of the endocrine diseases, cacachectic states, the anemias, post-surgical conditions, shock, hemorrheage, certain toxic conditions, and also an entirely different and rather limited number of individuals in whom low blood pressure is found without symptoms, and those without demonstrable disease, with or without symptoms. The two latter groups which have been mentioned comprise what is known as "essential hypotension." This particular type of low blood pressure is to be found in persons who are otherwise in good health, but as a result of this condition it is stated that these cases are subject to colds, and that they have cold feet and hands, or what is known as poor circulation, and that they are easily and quickly exhausted, both physically and mentally.

---

*Read before the East Tennessee Medical Association, Tate Springs, Tennessee, May 9, 1929.

An additional type of low blood pressure is what is known as postural hypotension. In this class of cases the outstanding feature of interest and importance is the extraordinary dependence of the systolic and diastolic blood pressures upon the influence of gravity, as exerted through alterations in the position of the body from the horizontal. It has been demonstrated that the rise in blood pressures in the head-down position, and their fall in the foot-down or erect position, occur almost immediately. The cause of this absence of normal vasomotor control seems to be purely speculative.

On reviewing our observations as a whole in regard to hypotension it may be stated that the factors involved in the production of low blood pressure are multiple.

That the greatest degree of dysfunction seems to be in the nervous system and the capillary circulation.

That the actual state of the heart muscle and blood vessels is a small factor.

That the presence of toxic conditions in the circulation in many cases seems to be a great probability.

The 100th Anniversary

of

The Tennessee State Medical Association

will be Celebrated

at Nashville

April 8-9-10, 1930

Plan now to attend the greatest meeting of the "Century"

PRECANCEROUS DERMATOSIS*

A. H. Lancaster, M.D., Knoxville

THE subject of the etiology of cancer has brought forth much research and writings in the past few years, all of which have been useful, but yet the cause of cancer is wrapped in a veil of mystery. Many attempts have been made to prove that it is parasitic in origin, but the evidence is not sufficient to have very many followers. Instead the trend of evidence is in favor of a trophic theory.

Although we are ignorant as to the cause of Epithelioma we are familiar with certain skin conditions, which we term precancerous dermatosis, which are potentially malignant, many of which develop into cancer. The lesions I have reference to are Seborrheic Keratosis, cutaneous horns, Leukoplakia buccalis, moles, pigmented and non-pigmented and less frequent conditions as cheilitis, Lupus vulgaris, Lupus Erythematosis, which has been irradiated, and irritated scars, especially scars from burns, x-ray keratosis, arsenical keratosis, long standing ulcers, cracks and fissures about the lips in the aged which last longer than three weeks, wens, fibromas, and other pathological conditions.

The same factors as age, sex, heredity, occupation, race, climate, dry and greasy skins, etc., that enter into the causation of cancer are equally as important in the etiology of precancerous lesions. With the exception of moles, the prevalent precancerous dermatoses as a rule are not seen in children and young adults.

The different environments to which the males are subjected as to wind, sun, and exposure are responsible for precancerous lesions being more prevalent in males than females.

Heredity plays an important part, in that certain families have a florid, harsh, dry, seborrheic skin and too, certain families are prone to moles and a rare condition, Xerodermia pigmentosa, which is often found in brothers and sisters.

The dark races are not so often the subjects of precancerous lesions as the fair-skinned from the North. Pigment is apparently valuable in the prevention of Epithelioma.

Before taking any more of your time I wish to deal briefly with some of the main points of Leukoplakia, seborrheic keratosis, cutaneous horns and moles. These are what I consider the most frequent precancerous dermatosis.

Leukoplakia may be defined as being a disease of the mucous membrance of the buccal cavity and tongue characterized by one or more round, irregular shaped, or diffused whitish patches often more or less thickened with a tendency to fissuring near the angle of the mouth and on the tongue.

Different statistics show that twenty to fifty per cent of diagnosed and untreated cases of Leukoplakia ultimately result in cancer. The earliest evidence of Leukoplakia is slightly increased redness, sometimes with a bluish tinge which is often so trifling as to be recognized only on close inspection. At times it has somewhat of a thin or braided look. At this time the patient is apt to complain of pain on taking hot or acid foods. This early stage often escapes observation and diagnosis until the appearance of a white spot which slowly forms. This consists of an oval, round, or irregular shaped patch with a faint pearly, bluish-white or pale milky color, usually on level with the surrounding mucous membrane from which it is sometimes separated by a narrow hyperemic band. Instead of presenting itself in well-defined patches it may first manifest itself in lines or streaks of variable length and contour —coalescing to form irregular patches. There is a tendency to gradual thickening of the patches. There may be a tendency to exfoliation which is an unfavorable sign. It is not uncommon to see the areas traversed with deep and painful fissures, especially if the tongue is the site of involvement.

---

*Read before Knox County Medical Society October 9, 1928.

When the patches reach the point of bleeding, ulceration and infiltration, malignancy has in all probability taken place and a grave problem confronts both the physician and the patient.

For a long time syphilis was thought to be a contributory factor in the causation of leukoplakia. If there is any type of leukoplakia due to syphilis it is leukoplakia of the tongue associated with glossitis characterized by fibrosis and endarteritis of the submucus structures. And in a short time it is apt to result in ulceration, due to obliteration of the blood vessels supplying the parts. I personally believe a positive Wasserman and leukoplakia a coincidence rather than syphilis as a contributory factor. Most observers have about agreed on irritation as the real exciting factor. Such as: jagged and carious teeth, ill-fitting bridges and plates, smoking and chewing, strong irritating drinks and eating highly seasoned foods. In the Phillipine Islands bettle nut chewing is a habit among the natives as smoking is among us and there they have a large number of leukoplakia cases terminating in cancer. After all the etiology may be summed as being due to physical and chemical irritation.

The diagnosis rests for all practical purposes between Lupus Erythematosis and lichen plannus. In both of these conditions you are apt to have cutaneous lesions. The mucus patches of syphilis in appearance may resemble leukoplakia but the consistency of the lesions and location are of great diagnostic value. The patches of syphilis are well back in the pharynx associated with sore throat and concomitant signs of syphilis and positive Wasserman.

Spontaneous cures are rare and the condition as a rule progresses for several years, and then remains stationary or terminates in cancer. As I have stated ulceration, infiltration and proliferation of Epithelial tissue are signs cancer is under way. Just when cancerous regeneration takes place it is difficult to say in any individual case. There are a number of reported cases in which the patch was successfully removed, later to notice cancerous involvement of the adjacent lymph nodes with no signs of recurrence in the original lesion, and finally death.

Treatment should be divided into palliative and curative. In mild cases the palliative treatament should be given a trial, and patient kept under observation. It should consist of mouth washes, removing all sources of irritation from ill-fitting bridges and plates. Total abstinence from tobacco in any form or fashion. Avoidance of hot irritating food and drinks. Should these methods fail then we should resort to the more drastic method in addition to the palliative method of treatment. There are a number of chemicals used to destroy these patches, as: undiluted acid nitrate of mercury, chromic acid, penciling with silver nitrate stick or daily application of saturated aques solution of the same and trichloracetic acid. Of the physical agents we have some good remedies in radium, carbon dioxide snow, and the electric cautery. There is no better method than the cautery. Anesthetize the area and sear off the top with the cautery at a dull red heat. Properly done, the final results are extremely satisfactory. And then continue the prophylactic treatment to prevent recurrences.

SEBORRHEIC KERATOSIS

Synonym—senile keratosis, seborrheic wart. Seborrheic keratosis are flat, more or less roughened, scaly, keratotic patches, which occur in the aged. They are one of the manifestations of degenerative changes in the skin. They are important because of the frequency with which they develop into epitheliomata.

As a rule seborrheic keratosis begins as brownish spots in the skin without any appreciable change, except for the discoloration and without subjective symptoms. They may persist like this without any definite change, in some cases for life, while in other people they undergo a degenerative change in a few years. Sometimes they thicken and become slightly elevated and persist as smooth brownish plaques varying in size up to the finger nail. As a rule with the advancing years the spots become roughened and covered with closely adherent small, thick, grayish or brownish scales. There is bleeding on removal of the scales and gaping follicles may be exposed.

The spots are irregular in outline and vary in size up to a five-cent piece or larger. The most typical location is the face, especially the cheeks and the nose. They are frequently seen upon the neck and back of the hands. There may be only one or two, or they may be numerous. In association with the lesions there is often a dry seborrhea or seborrheic dermatitis of scalp, face and ears.

The seborrheic keratosis may persist for years without evidence of inflammation. But frequently the base and edge of the seborrheic keratosis become red and show signs of inflammation, and when this occurs the lesions have already become cancerous as the underlying structure will show. The type of cancer most often developing from these lesions is Basal cell type, or, as is frequently called, rodent ulcer.

Seborrheic keratosis is most often seen in the old, but may occur in middle life. It is comparatively rare before forty years of age. Pusey states, "The most important factor in the production of senile keratosis is a peculiar quality of skin." The skin is usually harsh and dry showing more or less evidence of dry seborrhea. The capillaries of the cheek and the face are dilated and prominent. The epidermis appears thin. Seborrheic keratosis is often seen in two or more members of the same family. Occupation is one of the main factors in the etiology. It is frequently seen in farmers, sailors, long-shoremen and especially people leading an outdoor life exposed to sun and wind and, for this reason, is frequently called sailor's skin.

Seborrheic keratosis never heals spontaneously, but instead, has a tendency to grow worse and develop into Epithelioma. It is the most frequent source of Basal cell cancer. All lesions that show inflammatory signs should be treated radically. (By radically, I mean destruction.) Mild cases of seborrheic keratosis can be helped by cleansing the skin well before retiring and rub in the skin, lanalin, goose grease or some mild ointment. The methods of treatment are radium, x-ray, electrodesiccation or cautery and CO^2 snow. Electrodesiccation and cautery possibly offer better results than radium or x-ray, due to the skin being left soft and with good blood supply. Although irradiation gives good results when proper technique and dosage is used, and is a fairly popular method of treatment at the present day. CO^2 snow is still being used with admirable results. Just here I would like to quote what McKee and Lewis had to say in a recent issue of the Atlantic Medical Journal, "The electric cautery and electrodesiccation are excellent modalities, x-ray and radium, especially the beta rays are efficacious in many cases."

Cutaneous horns are hyperkeratotic masses of horney epithelium which assume hornlike shapes. They are usually curved or twisted and their surface is laminated or roughened of a dirty brownish color. They have a firm attachment and can only be removed by force. Sometimes they are spontaneously shed.

They usually develop in the aged along with senile keratosis. They may start as horny warts. The most frequent location is the face. The cutaneous horns of the old nearly always have a cancerous base.

The treatment consists of removal of the horn with destruction of the base. Should have the same follow up treatment as epithelioma, i.e., irradiation of the base and follow up care.

Moles pigmented and non-pigmented as precancerous lesions have received considerable attention in the past few years. Pigmented moles are especially important in that when they undergo malignant regeneration they form melanoma, the most virulent type of malignancy. Every pigmented mole subjected to irritation should be removed for fear of undergoing malignancy, if allowed to remain subjected to irritation, and every acquired mole should be removed.

When a pigmented mole is undergoing malignancy it increases in size, there is an increase in pigment, shows signs of inflammation, scaling and ulceration, and by the time signs of malignancy manifest themselves metastasis has taken place and a cure is hopeless. Pigmented moles should be handled with care. The operator should be sure that every pigmented cell is removed. For a pigmented mole removed improperly often excites malignancy. All pigmented moles should be removed properly and by properly I mean completely.

From the non-pigmented mole we at times see the development of basal cell epithelioma or rodent ulcer. Here too, all non-pigmented moles subjected to irritation should be removed.

The method of choice in care of these lesions depends upon the operator. I prefer electrodesiccation or cautery. If the mole is at all suspicious of malignancy removal should be followed by irradiation.

In closing these are the points that I wish to emphasize:

(1) Cancer never develops from normal epithelioma.

(2) Any abnormality of the skin subjected to irritation should be removed or watched by competent physician.

(3) Any sore that refuses to heal in ordinary time should be viewed with suspicion.

(4) Removal of precancerous lesions is neither dangerous nor painful. Incomplete or incompetent removal as well as delayed removal may be regarded with fear.

(5) Before treating any suspected precancerous lesion be sure of your diagnosis, if in doubt treat as epithelioma.

(6) By diligently watching and intelligently treating precancerous lesions cancer can be deprived of many of its victims.

WORLD-KNOWN AUTHORITIES

WILL APPEAR ON THE

CENTENNIAL PROGRAM

of

THE TENNESSEE STATE MEDICAL ASSOCIATION

NASHVILLE

April 8, 9, 10, 1930

HERMITAGE HOTEL

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1930

EDITORIAL

THE CENTENNIAL CELEBRATION

On April 8, 9, 10, the celebration of the one hundredth anniversary of organized medicine in Tennessee will be staged. The fact that our organization has lived and served for one hundred years is a distinction. Our organization has served in many ways. It has promoted advancements in the art and science of medicine. It has kept alive the ethical principles which should govern the practice of the healing art and without which genuine progress would never have been made. It has disseminated knowledge in such a way as to make the benefits of advances possible to the public of most every community through the medium of practitioners.

Many men of the entire South who are now leaders in the practice have received their medical education within our borders. Six of the Presidents of the American Medical Association have been members of the Tennessee State Medical Association. There is not a state in the Union with richer medical traditions.

Our Association will be carrying on if we so live and work today as to promote a broad general knowledge of the art and science of medicine among our members and inculcate a higher concept of ethical dealings in practice.

It is our firm conviction that the public of Tennessee receives the best medical service by and large of any state in the Union and that the public is indebted to our organization for these benefits.

PROGRAM AND ARRANGEMENT

The program committee has carried some very heavy responsibilities and has done some hard work in preparing a scientific program and an entertaining program that will be in harmony with the spirit and purpose of a centennial celebration. We believe we have accomplished this. The scientific program will consist of twenty-three numbers. Twelve of these numbers will be given by men from outside the state. Some of the most outstanding figures in American Medicine today will appear on our program. They are as follows:

Dr. William Allen Pusey, Chicago, author and ex-President of the American Medical Association.

Dr. Morris Fishbein, present editor of the Journal of the American Medical Association.

Dr. C. Jeff Miller, of New Orleans, president-elect of the American College of Surgeons.

Dr. Hugh Cumming, Washington, D. C., Surgeon-General of the United States Public Health Service.

Dr. M. L. Harris, present President of the American Medical Association.

Dr. John B. Deaver, of Philadelphia, whose text-books many doctors now living have studied.

Dr. John O. Polak, of Brooklyn, author and teacher.

Dr. J. S. McLester, of Birmingham, Alabama, one of the leading internists of the South.

Dr. W. C. Alvarez, of Rochester, Minn., author and research man who has contributed much to the progress of medicine.

Dr. John S. Horsley, of Richmond, Virginia, one of the leading surgeons of the South and author of a recent text-book.

Dr. Joseph W. Larimore, one of the leading internists of St. Louis, Mo.

Dr. I. A. Abt, of Chicago, author of a text on Pediatrics.

Dr. Olin West whose accomplishments need no mention from me.

The night program will consist of the following:

On the evening of Tuesday, April 8th, there will be the presidential address and an address by Dr. Philip M. Hamer, Professor of History in the University of Tennessee, and a memorial exercise dedicated to the memory of members of our organization not now living whose life and work merit a place in our everlasting memory.

On Wednesday evening, April 9th, there will be a banquet and a performance in costume in which the outstanding figures in Medicine for all time will be portrayed.

The Committee on Medical History say they will have the book on the history of medicine in Tennessee for one hundred years ready for display and sale. Enough is known of it already for us to say that it will be a book that every member will wish to own.

The general headquarters will be at the Hermitage Hotel. It is suggested that it may be advantageous for you to make hotel reservations at an early date.

STATE MEDICINE

The present year finds medical men all over America combating those influences which in their opinion tend toward the development of state medicine.

Recently there has come to our desk an announcement of the removal of Dr. Hugh Cabot from the position of Dean of the Medical Department of the University of Michigan because of his policies in this regard.

As we have before stated in these columns there is no need for such conflicts, but if they must come, organized medicine can do no less than stand by the traditional principles that have made it great. State medicine has been tried in the old world and been found wanting.

The medical needs, both preventive and curative, of our state, and the country at large, will be best supplied through the medium of a well organized, well educated profession of medicine governed by the traditional principles of medical ethics.

A WELCOME

To Members and Guests of the Tennessee State Medical Association:

On behalf of the Nashville Academy of Medicine and Davidson County Medical Society I wish to extend a hearty welcome to the members of the Association and to those who are not members who will favor us by their presence on the occasion of the centennial celebration of the Tennessee State Medical Association which takes place in Nashville on April 8, 9, 10.

I understand that the State Association has invited guests from all Southern states to be present on this occasion. I wish to assure them that they will receive a hearty welcome.

We are arranging to entertain the largest attendance the State Association has ever had.

Very cordially yours,

T. G. POLLARD, M.D., President,
Nashville Academy of Medicine,
and Davidson County Medical Society.

CREDENTIALS FOR DELEGATES

The attention of all the members of the Association is called to the following sections of the Constitution and By-laws:

Constitution, Article V: "The House of Delegates . . . shall consist of delegates elected by the component societies;——" By-laws, Chapter XI, Section 11: "—each component society shall elect a delegate or delegates to represent it in the House of Delegates of this Association in the proportion of one delegate and one alternate to each fifty members or fraction thereof. The Secretary of the Society shall send a list of such delegates to the Secretary of this Association *at least ten days before* the annual session."

March 29th is the last day upon which these lists can be received. Your society will not be represented in the House of Delegates if this list is not received in time.

C. N. COWDEN, M.D.,
Speaker of the House of Delegates.

DEATHS

Dr. J. R. Tarpley, 47, of Nashville, died on February 18th at the Protestant Hospital, following a stroke of apoplexy.

Dr. Tarpley graduated from the University of Tennessee Medical College in 1907.

Dr. Lyle West, of Chattanooga, was killed in an airplane crash on February 24th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, in 1921.

Resolutions Adopted by the Madison County Medical Society

This community was shocked and grieved at the death of Dr. Frank B. Hamilton which occurred December 12th, 1929.

In the prime of life, of stalwart frame and apparently vigorous health, he devoted himself to his growing practice with seemingly many years of useful services before him.

His acquaintanceship was general and he had a genial hearty personality which made him popular with all with whom he came in contact.

His friends were numbered among all classes, and his sympathetic understanding and close attention to the sick under his care endeared him to the members of every home he entered. He was preeminently the "family physician," skillful in diagnosis and treatment, helpful in council, buoyant in spirit, a friend to lean on in times of trouble, sickness and distress.

To us, his associates in the profession, his loss is felt with peculiar force, therefore it is eminently proper that it is hereby resolved:

That in the death of Dr. Hamilton this Society has lost a valued member whose vacant place will be hard to fill; that we pay earnest tribute to the qualities of heart and brain which endeared him to all the members of the profession who knew him, here and abroad. That we extend to the family our heartfelt sympathy in their sorrow which we share with them, and to the public he served so well.

While human understanding cannot fathom the sudden removal of our friend from a service of so much usefulness and promise, yet we humbly bow to the Divine Providence which doeth all things well.

That in the life of Dr. Hamilton we find an inspiration to greater service in the practice of our great profession.

Resolved further: That these resolutions be spread upon our minutes and a copy be sent to the family.

(Signed) Herman Hawkins.
A. B. Dancy.
Jere L. Crook.

NEWS NOTES AND COMMENTS

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held May 5, 1930.

Request for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Dr. Harry C. Schmeisser, of the University of Tennessee, addressed the Woman's Auxiliary of the Memphis and Shelby County Medical Society on February 19th. The doctor discussed the cancer problem.

Dr. Bruce M. Caldwell, of Chicago, recently spent three days in Chattanooga surveying the hospitals. Dr. Caldwell came at the invitation of the Hospital Committee of the Hamilton County Medical Society.

Dr. J. J. Teas, of Waverly, suffered a stroke of paralysis on February 20th.

In the schools we teach hygiene, but the practice thereof is neglected. A survey of all schools in the state would probably show Memphis schools to be a leader in applied hygiene, but we quote from the Press Scimitar of February 15th:

CLEAN HANDS

"Dirty hands are carriers of disease," says Dr. L. M. Graves, head of the Memphis Health Department.

"Children should wash their hands more often than adults because they have them in their mouths or close to them more frequently," says Dr. Louis Levy.

"Memphis is continually fighting against contagious diseases, especially children's diseases, yet a survey of 22 schools shows only six of them had soap and towels for pupils and three of these six schools had no soap and towels for the boys.

"This is an unpardonable condition at a time when many Memphis mothers are worrying about health of their children. They take all precaution at home, then send their children to school to go all day without washing their hands.

"Let's fight disease with clean hands.

"Let's have this condition in our city schools corrected by the time school opens Monday morning."

After having had seven meetings this year, Dr. Jesse Hill, Secretary of the Knox County Society, gives the individual attendance score of each member of the society. We are sorry we cannot publish the list, but here are the totals:

9 members present at all (7) meetings.
13 members present at 6 meetings.
12 members present at 5 meetings.
12 members present at 4 meetings.
21 members present at 3 meetings.
21 members present at 2 meetings.
16 members present at 1 meeting.
33 members present at 0 meetings.

Of the 33 class 3 were absent due to sickness and (we suppose) the other 30 were busy. It does seem to be hard luck that 30 Knoxville doctors pay annual dues of $15.00 each and then at 8 P. M. every Tuesday have an emergency call that prevents their attending the medical meeting.

Dr. W. S. Lockert is recovering from a broken leg sustained when he slipped and fell on the ice in Ashland City in December.

Dr. C. V. Stephenson, of Centreville, was painfully injured in an auto wreck on January 24th.

Dr. V. K. Earthman, of Shelbyville, has moved to Murfreesboro, and will confine his practice to E. E. N. T.

Dr. Henry C. Sanders, of Selmer, was seriously injured when struck by an auto.

A history of medical achievement in the past fifty years was placed before members of the U.-T. Pre-Med Club on February 6th as Dr. E. R. Zemp told of recent accomplishments in preventive medicine and surgery.

Dr. C. D. Wilder, of Orlando, Florida, will be associated with Dr. George McSwain at the McSwain Clinic. Dr. Wilder is an eye, ear, nose and throat specialist.

The number of practicing physicians has decreased in Tennessee from 3,218 in 1923 to 2,787 in 1927. The percentage of decrease was 13.4 per cent.

Gains of approximately 5 per cent were shown during this period in the urban counties, Shelby and Davidson, where medical colleges are located. The other two counties containing large cities, Knox and Hamilton, showed slight losses of less than one per cent.

About the only substantial gains shown in other counties having more than a dozen physicians was in Blount, where the number increased from 25 to 30, and in Williamson, 31 to 37.

Losses in many of the rural counties registered as high as 40 per cent.—*Knoxville Journal.*

THE KNOXVILLE AFFAIR

There seems to be some trouble in Knoxville between the management of the General Hospital and the Medical Staff. We print herewith a letter explaining the position of the doctors. Eighty-eight doctors have signed this letter as individuals. Most of them or probably all of them are members of the Knox County Medical Society.

The Society voted to take no action on the question, leaving each individual free to act for himself:

"Inasmuch as the Mayor of the City of Knoxville, and some of the members of the council have given their opinions in public session of the physicians, and as such expressions were unbecoming to men who should occupy such offices, and as the Director of Public Welfare states his lack of confidence in the profession's ability to govern itself to the best interest of the profession and those to whom it administers, we, the undersigned physicians do hereby refuse to serve at the Knoxville General Hospital under the present existing conditions prescribed by the Director of Public Welfare."

In further explanation of the stand taken by the doctors, the following statement was issued by a committee:

"In order that the public may fully understand the position taken by the physicians of Knoxville, the committee wishes to make the following statement: 'The physicians with the exception of one, have given their services free, which amounts to over $500,000.00 a year. Having given their services free, they feel that they should retain the right to select their chief of staff and other officers including executive officers to make their own assignments and to adopt their own by-laws and constitution governing the proceedings of that body and the disciplings of that body and the discipling its own members. We furthermore wish to make plain what are the duties of the executive officers chosen by the staff. It is their duty to make assignments and see that all services are taken care of, to make recommendation to the superintendent in regard to the nursing and care of patients in the hospital. The executive committee has nothing whatever to do with the finances, the hiring of the personnel or the administrative affairs. In short, it should be their duty to see that adequate surgical, medical, nursing and hospital care be given to the patients.

"'Suppose the charter does give the Director of Public Welfare the power to choose his own executive committee. Is it necessary that he assert that authority? Up to the present time we had three directors of public welfare. The first two officials consider the dignity of the medical profession and the qualifications of its members. It is quite evident that a director may be chosen for political purposes, as often as every two years, and if chosen for political purposes, he must favor his friends. His friends may not have the personal qualifications and training to make good executive officers. The staff is displeased and disorganization results.

"'Can the people of Knoxville afford to have the physicians who administer to charity disorganized every two years? If the doctors who have gone to schools, colleges, medical school, taking interne work and post-graduate work, are not capable of governing themselves and knowing how to administer to sick, pray tell us, O, Aesculapius (god of medicine)! where did a layman with much inferior education and qualification get his wisdom?

"'Committee:

"'Dr. R. G. Reaves, Chairman;
"'Dr. Tom R. Barry,
"'Dr. M. S. Roberts,
"'Dr. J. M. Lea,
"'Dr. E. H. Ford.'"

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties—The Society met in McKenzie on February 18th. Two interesting papers were read, one by Dr. R. W. Brandon, of Martin, on "Appendicitis in Children;" the other by Dr. Roy Douglass, of Huntingdon, on "An Ordinary Day's Work by an Ordinary Doctor."

Davidson County—The Nashville Academy of Medicine and Davidson County Medical Society held meetings as follows:

Feb. 11th—"Malignancies of the Oral Cavity," Dr. C. M. Hamilton. Discussion opened by Dr. L. W. Edwards.

Feb. 18th—"The Etiology of Purulent

CORRECTED ROLL OF COUNTY SOCIETIES

County	President	Secretary	Meeting Date
Anderson	H. D. Hicks, Clinton	J. S. Hall, Clinton	1st Mon., 2 P.M.
Bedford	G. W. Moody, Shelbyville	W. H. Avery, Shelbyville	3rd Thurs,. 2 P.M., Dr. Ray's office.
Benton	See Carroll County		
Blount	Geo. Burchfield, Maryville	J. A. McCulloch, Maryville	Thurs, 8 P.M., First Nat'l Bank Bldg.
Bradley	W. H. Sullivan, Cleveland	E. R. Ferguson, Cleveland	1st and 3rd Thurs., 7 P.M., Court House
Campbell	H. T. Fortner, Jellico	F. A, McClintock, Newcomb	4th Thurs.
Carroll	H. T. Collier, McKenzie	A. C. Elinor, McKenzie	Carroll, Weakley, Benton, Henry. 2nd Tues., Hotel Lynn, McKenzie.
Carter	W. G. Frost, Elizabethton	E. T. Pearson, Elizabethon	1st Tues., 7:30 P.M., First Nat'l Bk. Bldg.
Cheatham	W. S. Lockert, Ashland City	P. L. Pitt, Ashland City	
Chester		J. D. Anderson, Henderson	With Decatur and Henderson, 2nd Tues,
Claiborne	See Hancock County		
Clay	See Macon County		
Cocke	A. L. Proffitt, Newport	J. E. Hampton, Newport	1st Tues.
Coffee	E. L. Womack, Summitville	E. P. Vaughan, Manchester	1st Thurs.
Crockett	See Dyer County		
Cumberland	E. W. Mitchell, Crossville	V. L. Lewis, Crossville	With Overton, White, 3rd Thurs.
Davidson	J. O. Manier, Doctors' Bldg.	N. S. Shofner, Doctors' Bldg.	Every Tues., 8 P.M., Doctors' Bldg.
Decatur		J. L. McMillan, Decaturville	(See Chester County).
Dickson		R. P. Beasley, Dickson	
Dyer, Lake, C'ckett	W. W. Holland, Dyersburg	E. H. Baird, Dyersburg	1st Wed., monthly.
Fayette		J. W. Morris, Somerville	Fayette-Hardeman, 1st Thurs,
Franklin	L. A. Templeton, Winchester	Jno. P. Grisard, Winchester	Last Fri., 7 P.M., Court House.
Gibson	A. A. Donaldson, Trenton	James A. Crabtree, Trenton	
Giles	E. M. Fuqua, Pulaski	T. F. Booth, Pulaski	4th Thurs., Citizens Bank.
Greene	L. E. Coolidge, Greeneville	M. A. Blanton, Mosheim	2nd Tues., 6:30 P.M.
Hamilton	J. H. Revington, Volunteer Bldg.	S, F. McIntosh, Volunteer Bldg	Each Thurs., 8 P.M., Manufacturers' Ass'n Bldg.
Hamblen	S. M. Ryburn, Morriston	P. L. Henderson, Morristown	
Han'k, Cl'b'ne, U'n		J. H. Carr, Maynardsville	2nd Mon.
Hardeman	See Fayette County	J. Y. Alexander, Middleton	1st Tues., each quarter, Bolivar.
Hardin, Lawrence, Lewis, P'ry, W'yne	J. H. Pickard, Hohenwald	C. C. Stockard, Lawrenceburg	Last Tues.
Hawkins		J. S. Lyons, Rogersville	
Haywood	J. M. Chambers, Brownsville	J. L. Edwards, Brownsville	Last Tues., 7 P.M.
Henderson		J. F. Goff, Lexington	(See Chester County).
Henry	R. G. Fish, Paris	A. A, Oliver, Paris	(See Carroll County).
Hickman	J. S. Beasley, Centreville	W. K. Edwards, Centreville	
Humphreys	J. T. Cooley, Waverly	W. W. Slayden, Waverly	
Jackson	C. E. Reeves, Gainesboro	L. R. Anderson, Gainesboro	1st Fri., Court House (See Macon County).
Jefferson		B. M. Tittsworth, Jefferson City	
Johnson	See Sullivan County		
Knox	Ralph Monger, Medical Bldg.	Jesse C. Hill, 4323 Lyons View Pk.	Every Tues., 8 P.M., Medical Bldg.
Lake	See Dyer County		
Lauderdale	G. A. Lusk, Ripley	W. C. Sanford, Ripley	2nd Thurs.
Lawrence	See Hardin County		
Lewis	See Hardin County		
Lincoln	D. T. Hardin, Fayetteville	L. L. Sheddan, Fayetteville	
Loudon	W. H. Harrison, Loudon	J. G, Eblen, Lenoir City	1st Thurs., Loudon; 3rd Thurs., Lenoir City, 7 P.M.
Macon	M. H, Allen, Lafayette	P. East, Lafayette	1st Wed. each quarter.
Madison	J. R. Thompson, Jackson	B. C. Arnold, Jackson	1st and 3rd Tues., 7:30 P.M., Y.M.C.A.
Marshall		J. A. Hardison, Lewisburg	4th Thurs.
Maury	J. T. Hardison, Carters Creek	O. J. Porter, Columbia	2nd Mon., 11 A.M., Elk Lodge Room.
Monroe	P. E. Parker, Sweetwater	H. M. Kelso, Madisonville	2nd Tues.
Montgomery	J. H. Ledbetter, Clarksville	F. J. Malone, Clarksville	3rd Thurs. night,
Morgan		J. F. Love, Lancing	
McMinn	J. R. Nankivell, Athens	C. O. Foree, Athens	2nd Thurs., 2 P.M. Dr. Nankivell's office.
McNairy	R. H. Hendrick, Selmer	H. C. Sanders, Selmer	3rd Thurs.
Obion	C. B. A. Turner, Union City	F. B. Kimzey, Union City	
Overton	See Cumberland County	A. B. Qualls, Livingston	3rd Fri.
Perry	See Hardin		
Polk	T. J. Hicks, Copperhill	F. O. Geisler, Isabella	
Putnam	H. T. Taylor, Cookeville	C. P. Martin, Cookeville	1st Thurs., 1:30 P.M.
Roane	F. A. Neergaard, Harriman	W. W. Hill, Harriman	1st and 3rd Tues., 1 P.M., Red Cross Rooms.
Robertson	J. W. Thomas, Cross Plains	W. F. Fyke, Springfield	3rd Tues,
Rutherford		J. A. Scott, Murfreesboro	
Scott	M. E. Thompson, Oneida	D. M. Woodward, Oneida	2nd Wed.
Sevier	Ashley W. Ogle, Sevierville	R. J. Ingle, Sevierville	1st Mon., 7 P.M., 1st Nat'l Bank Bldg.
Sullivan	T. B. Yancy, Kingsport	H. S. Smythe, Bristol	1st Fri.
Shelby	J. B. Blue, Col. Tower Bldg.	A. F. Cooper, Bk. of Com. Bldg.	1st and 3rd Tues., Medical Arts Bldg.
Smith	R. E. Key, Monoville	B. J. High, Elmwood	1st Fri.
Sumner	L. M. Woodson, Gallatin	J. R. Parker, Gallatin	
Tipton	G. B. Gillespie, Covington	L, J. Lindsey, Covington	
Unicoi	R. E. Stack, Erwin	J. R. Moody, Erwin	Every other Thurs.
Union	See Hancock County		
Warren		Jno. S. Harris, McMinnville	1st Wed., 1:30 P.M.
Washington	A. J. Willis, Jonesboro	C. W. Friberg, Johnson City	2nd Thurs. at noon, Hotel John Sevier.
Wayne	See Hardin County		
Weakley	T. B. Wingo, Martin	J. E. Taylor, Dresden	3rd Wed., May, Aug., and Nov., at Martin; also see Carroll County.
White	Isaac Barnes, Bon Air	S. E. Gaines, Sparta	2nd Thurs., Dr. Gaines' office. See Cumberland.
Williamson	J. B. Core, Allisona	K. S. Howlett, Franklin	2nd Tues.
Wilson	J. R. Doak, Watertown	J. R. Bone, Lebanon	Thurs. after 1st Wed., 2:00 P.M.

Middle Ear Infection," Dr. M. M. Cullom. Discussion opened by Dr. F. E. Hasty.

Feb. 25th—"Colon Bacillus Pyelitis," Dr. J. C. Pennington. Discussion opened by Dr. Henry L. Douglass.

March 4th—"The Clinical Value of the Aschheim-Vondek Test for Pregnancy." Discussion opened by Dr. J. C. Cayce.

Dyer, Lake and Crockett Counties—Dr. W. C. Chaney, of Memphis, presented a lantern slide demonstration and paper on "Recent Advancements in the Diagnosis and Treatment of Pernicious Anemia." Dr. E. H. Baird gave a case report, "Ulcerative Blastomycosis of the Arm." Dr. W. W. Holland read a paper on "Obstetrical Responsibilities."

Hamilton County—We have received the 1930 program of the Chattanooga and Hamilton County Medical Society. It is a 24-page vest pocket booklet containing the following information: Names of Officers; Board of Governors; Board of Censors; House of Delegates; Committees; Programs for fifty meetings; a list of members of the Association, (addresses, office and home phone numbers); a list of the hospitals; consultation list; register of graduate nurses and a list of practical nurses.

Such a book is certainly a great help to each member of the society. It shows the program committee has been at work and that the membership is cooperating to make every meeting count. Sixty-seven subjects and essayists are listed and men assigned to open the discussions. The doctor to open the discussion is expected to talk on the subject in the absence of the essayist.

Meetings were held on February 6, 13, 20, 27, March 6 and 13th, as follows:

February 6th—"Empyema," Dr. Lyle B. West. Discussion opened by Dr. A. M. Patterson.

February 13th—"Geriatrics," Dr. E. H. Magee. Discussion opened by Dr. J. B. Steele.

February 20th—"Paper," Dr. W. W. Young, Atlanta, Ga.

February 27th—"Indications for Pylorectomy and Gastroenterostomy," Dr. Raymond Wallace. Discussion opened by Dr. H. L. Fancher.

March 6th—"Paper," Dr. Isadore Cohn, New Orleans.

March 13th—"Diverticulitis," Dr. B. L. Jacobs. Discussion opened by Dr. John B. Haskins.

Hardin, Lawrence, Lewis, Perry, Wayne Counties—Papers were given by three Nashville medical men at a meeting of the Five Counties Medical Society held February 25th at Lawrenceburg. The meeting was attended by physicians representing all five counties.

Dr. John S. Cayce's paper, "Uses and Abuses of Pituitary Extract," was discussed by Dr. George P. Chambers of Savannah, and Dr. C. C. Hardison of Iron City. The discussion of a paper, "The Diagnosis of Acute Abdominal Crises," presented by Dr. H. H. Shoulders, was by Dr. George E. Williams of Columbia and Dr. W. H. Neal of Lawrenceburg.

"Acute Suppurative Otitia Media" was the subject of the paper of Dr. Bruce P'Pool, which was discussed by Dr. J. W. Danley of Lawrenceburg and Dr. G. N. Springer of Hohenwald. The other paper presented by Dr. J. H. Tilley of Lawrenceburg, was on "Abnormal Uterine Bleeding." The discussion was by Dr. C. M. Womack of Lawrenceburg and Dr. A. D. Cole of Loretto.

Knox County—Recent programs were as follows:

February 11—Dinner at the Andrew Johnson Hotel followed by an address by Dr. C. Willis Campbell, of Memphis, on "Operative Methods for the Purpose of Choosing the Lumbo Sacral and Sacral Iliac Joints."

February 18—Dr. Reese Patterson and Dr. Eugene Abercrombie gave a symposium on "Foreign Bodies in the Eosophagael and Respiratory Tract."

February 25—Dr. A. L. Rule spoke on "Mediastinal Tumors with the Report of a

Case." Drs. H. H. McCampbell, A. G. Kern and R. B. Wood led the discussion.

March 4—"Eye Manifestations of Syphilis," by Dr. Robert S. Leach, with discussion opened by Drs. Tom Barry, A. H. Lancaster and C. J. Carmichael.

Maury County—Dr. E. L. Bishop, Commissioner of the Tennessee State Board, addressed the February meeting. Dr. Bishop discussed the relation of the State Health Department to the general profession. Dr. K. S. Howlett, of Franklin, was present as a guest and talked along the same line.

Obion County—The January meeting was attended by a majority of the members. Dr. J. D. Carlton was elected president. Other officers were re-elected.

Roane County—The February meeting was attended by Drs. J. J. Waller, G. P. Zirkle, J. B. Cross, F. A. Neergaard and W. W. Hill. The essayist, Dr. Waller, discussed "Constipation, Its Causes and Relief by Diet." A general discussion followed and interesting cases were reported.

Rutherford County—Dr. W. O. Floyd, of Nashville, read a paper on "Gall Bladder Diseases" before the Stones River Academy of Medicine on February 13th.

Roane County—The Roane County Medical Society met in the Red Cross room at the City Hall, January 21st, for their regular monthly meeting.

Those present were Dr. J. G. Waller, of Oliver Springs; Dr. T. L. Bowman, of Rockwood; Dr. G. P. Zirkle and Dr. J. C. Fly, of Kingston, and Dr. F. A. Neergaard and Dr. W. W. Hill, of Harriman.

There were a number of unusual case reports which brought out an interesting discussion engaged in by all present. Dr. Fly made a talk on smallpox and its diagnosis.

Robertson County—The Robertson County Medical Society met January 21st in Springfield, despite the inclement weather with a good attendance. Quite a number of interesting clinical cases were reported by different members and all of them were freely discussed.

The essayist for the meeting was Dr. M. B. Garner, who chose for his subject, "Burns" and reported two clinical cases in connection with his paper. The next meeting of the society will be held on Tuesday, February 18.

Overton, Cumberland, Putnam and White—The four County Medical Society, composed of physicians of Overton, Cumberland, Putnam and White Counties held its January meeting at Sparta. President Howard of Cookeville, presided.

Election of officers will be held at the next meeting, at Cookeville, the third Thursday in March.

Dr. V. L. Lewis of Crossville read a paper on "Influenza" and Dr. S. E. Gaines of Sparta lead the discussion.

Stone River Medical Academy—Dr. W. S. Farmer, superintendent of the Central State Hospital for the Insane, was the principal speaker on the program of the monthly meeting of the Stone's River Medical Academy January 8th. The meeting was held at Rutherford Hospital with a large portion of the membership of the organization present.

Dr. Farmer spoke on "Court Cases, Psychiatry and Law Enforcement." His message was extremely interesting and was greatly enjoyed.

Scott County—The Scott County Medical Society was reorganized in January with six members. Regular meetings will be held each second Wednesday.

Sumner County—The January meeting was held at the Community Club on the 22nd. A large attendance listened to an interesting program.

Tri-State—Over eight hundred doctors from Tennessee, Arkansas and Mississippi attended this Memphis meeting on January 14-16. The program was composed of papers by men nationally known. Every address was interesting and of the highest scientific value.

Dr. Nick S. Walker, of Dyersburg, was elected President. Dr. A. G. Payne, Greeneville, Miss., President-elect for 1931. Vice-Presents: Drs. A. J. Lackey, Ripley; J. M. Hood, Houlka, Miss., and Wm. Majors, Paragould, Arkansas. Dr. A. F. Cooper, Memphis, was re-elected Secretary-Treasurer.

WORLD-KNOWN AUTHORITIES

WILL APPEAR ON THE

CENTENNIAL PROGRAM

of

THE TENNESSEE STATE MEDICAL ASSOCIATION

NASHVILLE

April 8, 9, 10, 1930

HERMITAGE HOTEL

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Analgesia and Anesthesia During Labor, by Theodore Miller, M.D., Cleveland, O., The Ohio State Medical Journal, December, 1929.

The author believes that to every woman in labor regardless of her physical condition, some form of therapy which will still her pain can be safely given. The administration of ethylene or nitrous oxide if properly given is superior to ether, but requires one familiar with the administration, a cumbersome apparatus and is expensive. Small amounts of ether can be given over a period with less risk than chloroform, but it is irritating to the respiratory tract and kidneys. Ether is demanded for profound anesthesia and relaxation.

Surprising satisfactory results can be achieved with scopolomin and morphine given in small doses often repeated. Scopolamin is repeated every hour and a half to two hours in doses of one three-hundredth of a grain. In one of the author's cases seventeen doses were given and he reports a presumably authentic case where seventy-two doses were given.

Labor may be prolonged but not much. The rest between pains more than offsets the exhaustion due to labor without relief of pain. There is prolongation of the perineal stage and one frequently has to resort to low forceps delivery. In skilled hands this does constitute an argument against scopolamin and morphine, for forceps controlled delivery is becoming much more general in primiparae. Apnea of the baby is the chief deterrent to a more widespread use of this method. Respiration can be easily established. The dread of asphyxia has been exaggerated.

Gwathmey's synergistic method of rectal anesthesia is very satisfactory, but it cannot be used without due caustion and an essential understanding of the patient. Spinal anesthesia gives a degree of cervical and pelvic relaxation which is most gratifying when there is a more general understanding of the pitfalls and means of avoiding them through pre-delivery selection of patients, the field of usefulness will be very widely extended.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Dermatological Extract: Acetyl-Salicylic Acid in the Treatment of Ringworm, by A. P. Hudgins, M.D., Hinton, W. Va.

In the West Virginia Medical Journal, February, 1930, he reports its use, both as a powder and ointment, in the strength of three drams to one ounce of base. The advantages claimed are as follows: First, rapid antipruritic effect. Second, non-irritating. Third, effective as a dusting powder. Fourth, response usually prompt.

The Bacteriophage in Pyogenic Infections of the Skin, by Harry E. Alderson, M.D., San Francisco, Cal.

In the Archives of Dermatology and Syphilology, February 1930, he reports its successful use in ten cases and unsuccessful use in three cases. It was used both in acne vulgaris and furunculosis. From two to five subcutaneous injections were given, varying in amount from one to three c.c's, and in time about two days apart. Improvement was usually noticed after the second injection. Polyvirulent staphlococcus phages were used in all but three cases.

INTERNAL MEDICINE

By R. B. Wood, M.D.
Medical Building, Knoxville

Chronic Duodenal Ileus, by Dr. Katherine S. Andrews in Med. Clin. of N. A. January 1930.

History, physical, serological, roetgnological and operative findings is given on two cases which represent two groups of cases suffering with duodenal ileus of the chronic variety.

The chief symptoms are pain indefinite in character and radiation, which may occur at any point in the abdomen.

At times suggestive of ulcer there is no periodicity, as in the latter. Vomiting is rare in this series. Lassitude and easy fatigability is common.

Physical examination is usually negative, the patients being frequently of the ptotic type.

The x-ray offers the best aid from the laboratory standpoint in that usually there is shown either (1) dilatation and stasis in the colon with slowness of emptying of the stomach and duodenum, (2) antiperistalsis, or constant deformity of the cap. About 50 per cent of cases show the last mentioned.

Gastric acidity is usually slightly increased. The relief comes from relief of the obstruction which is frequently surgical in that the cause of the ileus is usually mechanical in type. Should no relief of the obstruction be experienced, duodenojejunostomy is frequently found to benefit.

Diagnosis of Gall Stones. Relative Accuracy of Cholecystography and Non-Surgical Biliary Drainage, by Dr. Harry Sharp, Henry Tumen, Gadore Rodis, in Clinics of North America. January 1930.

Attention is called to the fact that a typical history of gall bladder attacks does not always mean a pathological gall bladder.

A study of thirty-eight cases is given comparing relative results in the diagnosis of stones by use of biliary drainage with microscopic study of the contents and by use of the dye and x-ray. In thirty-eight cases a positive diagnosis of stone was made in twenty-three and their absence claimed in eleven. In four others no opinion was ventured except for cystic duct obstruction. At operation stones were found in the twenty-three cases so diagnosed and in the other eleven no stones were found. However, stones were found occluding the cystic duct in the four cases about which no opinion was offered. Even thus a correct diagnosis was made in 89.5 per cent of the series.

Of this series twenty-four cases were x-rayed with the report of stones made in two cases, making an error of 86.8 per cent, while the error by microscopic examination of the drained bile was 16.6 per cent. No error as regards stone was made where B. Bile was obtained. The diagnosis rests on the finding of calcium bilirubinate pigment and cholesterol crystals.

OPTHALMOLOGY

By Robert J. Warner, M.D.

Doctors Building, Nashville

A Modification of Lagrange's Operation, by W. H. Kiep. British Medical Journal, August, 1929.

The technical difficulty of the Lagrange operation and that the size of the scleral wound is out of all proportion to the needs of the case have suggested to the author the following modifications: A conjunctival flap made as thick as possible is reflected down to from 1.5 to 2 mm. from the limbus. A Tooke's corneal splitting knife then cuts a groove in the sclera at a distance of from 2 to 2.5 mm. from the limbus. This serves there for the application of the point of a keratome, and the keratome is pushed straight downward into the anterior chamber, the incision measuring from 3 to 4 mm. The keratome is rapidly withdrawn so as not to lose the aqueous. The anterior scleral lip is seized with the fine forceps, and a small piece excised with de Wecker's scissors. The peripheric iris is abscised, so making a small peripheric buttonhole iridectomy. The iris is replaced by pressing on the cornea at the limbus with a spatula. The conjunctival flap is secured by a stitch. The author sees these advantages in this modification:

1. There is minimum disturbance to the intra-ocular structures and risk of intra-ocular hemorrhage.

2. In most cases, the operation can be done without collapse of the anterior chamber.

3. The thickness of the conjunctival covering of the fistula safeguards against late infections.

4. Should fibrosis develop, the operation may be repeated.

PEDIATRICS

By John M. Lee. M.D.

Doctors Building, Nashville

Pediatrics Abstract. The Etiology of Infantile Spasmophilia, by H. J. Gerstenberger, J. I. Hartman, G. R. Russell, T. S. Wilder. The Jour. Amer. Med. Assoc. February 22, 1930.

The authors summarize their article in the following conclusions:

1. Additional evidence has been presented as a valid substantiation of the theory advanced by us on a previous occasion regarding the etiology of infantile spasmophilia; namely, that there are three factors essential to its development: (a) rickets; (b) exposure of the rachitic infant to the influence of the antirachitic factor in one form or another in a sufficient degree to produce some healing, and (c) interruption of the exposure or inefficacy of the exposure.

2. The evidence presented consists of a report of the development of typical spasmophilia due to interrupted therapy in two rachitic infants who were exposed to sunlight and due to inadequate therapy in one rachitic infant who received human milk possessing some antirachitic powers.

The two infants were exposed daily at noon for one hour to sunlight as it passed through glass that was more permeable to its ultraviolet rays than is ordinary window glass. Approximately sixty days after February 1, or twenty-four days after March 9, the first symptoms of spasmophilia appeared. The most marked spasmophilic symptoms were observed from eighty to ninety days after the first of February.

The other infant developed spasmophilia after and while being fed milk from a wet-nurse whose skin (arms, face, chest triangle) was exposed daily to the summer sun for forty-five minutes. This milk had antirachitic power but not in a marked degree, and represented for this rachitic infant an inadequate intake of the antirachitic factor, although it also may have been of an interrupted character.

3. A chart is presented of a rachitic infant who developed mild symptoms of spasmophilia sixty days after an individual erythema-producing exposure to the quartz lamp.

4. Four additional charts are presented illustrating our previous experiences with the development of spasmophilia in rachitic infants. In two of the four, healing progressed after admission even though no antirachitic factor was administered in the hospital, proving that these rachitic infants must have been exposed before admission to the hospital to the influence of the antirachitic factor.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.
Doctors Building, Nashville

Roentgen Irradiation in Unresolved Pneumonia, by Edwin A. Merritt, M.D., and Edgar M. McPeak, M.D. American Journal of Roentgenology, January 1930.

It has been known that radiation accelerates the resolution of furunculosis, cellulitis, and other infections. It is thought that a local change in chemistry of the tissues helps to clear up the infection by resolution or suppuration followed by resolution.

These facts led to its trial on a case of unresolved lobar pneumonia. The success in this case justified its use in six other cases.

Case 1. White male, age 35, physician, had pneumonia six weeks previously. He was running a temperature and failed to gain his strength. The right base was found to be infiltrated. He was treated in all directions by unfiltered x-rays. He had approximately three-fourths of a skin unit. The next day he coughed up three ounces of pus, and made a rapid recovery.

In other cases a standard technique was adopted. 5 MA., 7 inch spark gap, 4 minutes time, 10 inch target skin distance and 3 mm. aluminum filter. One area anteriorly and one posteriorly is treated. Treatment can be repeated in ten days.

Case 2. White male, age 46. Had lobar pneumonia four weeks previously, and had continued to run fever with headaches, coughs, and pains in chest. White blood count was 13,500. A zone of infiltration was found to extend from hylus of right lung to periphery. It was 4 cell in width. He was treated and that afternoon his temperature rose a degree. It subsided the next day when he coughed up a large quantity of purulent material and remained normal. Two days after treatment the lesion had cleared with the exception of hylus. His white blood count had dropped 6,400. Four days later there was no change in hylus. The patient left the hospital without further treatment.

Case 3. White male, age 35. Had bilateral lobar pneumonia over a month previously. He was very sick. The lower two-thirds of left lung was consolidated. Encysted fluid was found in upper half of right lung. The consolidation was practically clear five days after treatment. The encapsulated area had to be relieved surgically. Recovery was rapid.

Case 4. Colored woman, age 35. Had an acute respiratory infection for several weeks. Infiltration of right hylus was thought to be inflammatory. Several days after treatment a reduction in the size of the shadow was noted, but regression was slow. She left hospital before recovery.

Case 5. White woman, age 35. Had contracted pneumonia three months before. She was bedridden and in poor condition. Marked consolidation and cavitation was found in upper left chest. The next day after treatment, a large quantity of purulent material was coughed up. Recovery was immediate. She was practically well within ten days.

Case 6. White woman, age 29. Had pulmonary infection for several weeks. Consolidation was discovered in anterior portion of right chest on level of fourth and fifth interspaces. Ten days after treatment the area had disappeared.

Case 7. White male, age 75. Had been in poor health for over a year. A clinical diagnosis of tuberculosis was made. Extensive infiltration was found in upper right chest which did not appear to be tuberculosis. No change was made after three treatments at ten day intervals.

In the seven cases reported, four cleared up, two improved and one was unchanged. In the four cases that recovered, the disease was found in the parenchyma. The two cases with hylar involvement improved slowly. In the case with involvement of both hylus and parenchyma, the parenchyma cleared faster than the hylus. The case without improvement was an old man who had been sick over a year and possibly had tuberculosis.

The results have been gratifying and prompt. The treatment is short and causes no discomfort. Every case that shows radiographic signs of delayed resolution three weeks after onset should be irradiated.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Splenectomy in Thrombopenic Purpura. Alfred Hamlin Washburn, M.D., San Francisco. The Journal of the American Medical Association, Vol. 94, No. 5, February 1930, pages 313-317.

Giffen, Reuben and Claman, Gregory, Koster, and others have stressed the prime importance of a correct diagnosis as the chief indication for splenectomy in idiopathic thrombopenic purpura. In the presence of purpura, especially if associated with bleeding from mucous membranes as well as subcontaneously, there are four cardinal observations that should usually clinch the diagnosis of a thrombopenic purpura. These are (1) an increased bleeding time; (2) a normal or slightly increased coagulation time; (3) a decreased platelet count, and (4) a soft, nonretractile blood clot. In the three cases reported here, the bleeding times were taken from 4 to 5 cc. of blood into a smoothly paraffined test tube of 12 to 14 mm. diameter, and the platelets were counted directly in a counting chamber and indirectly by obtaining their proportion to the red corpuscles on stained smears. In determining the coagulation time it is of extreme importance that the method used should make possible accurate observation of the nature of the resulting clot since clot retractility is so closely related to the number of platelets.

When the diagnosis of the thrombopenic purpura has been established, one must still rule out the various diseases in which this may be a symptom. The ruling out of leukemia and the severe anemias usually requires a careful study of the blood. The problem of differentiating between purpura secondary to infections and the true idiopathic type requires a painstaking search for foci of infection, their removal if found, and careful observation of the blood changes thereafter. This is brought out in case 2. When no possible cause can be found, as in case 3, a diagnosis of idiopathic thrombopenic purpura may be made.

The most skeptical analyst of the forty-eight reported cases of splenectomy in children must admit that the results justify this operation as a wise therapeutic measure in many cases of thrombopenic purpura. It is ever contraindicated and if so when? Many authors, notably Whipple and Spence, have stated that it definitely contraindicated in acute cases. On the other hand, Giffen, Reuben and Claman and others believe that the acuteness of the condition is not a safe guide. At least two of the four deaths reported in childhood were in cases of acutely bleeding purpura. It might help to clarify the situation if "acute" is defined as "acutely bleeding." On the bases of their onset of duration many cases are diagnosed as acute purpura hemorrhagica, as were cases 2 and 3 reported in this paper. There can be little doubt that a splenectomy in either one of these children, if done at the time of acute hemorrhages, would have been a much greater risk than during the relatively quiescent phase of the disease. Fortunately, most cases show an intermittence in the severity and frequency of the purpuric manisfestations. Transfusions, if given in sufficient quantity and often enough, will usually tide the patient over an acute episode, allowing the splenectomy to be done at a more advantageous time. In the rare cases in which transfusions fail to arrest the hemorrhage nothing can be lost by attempting operation, which may be a life saving measure even in the presence of acute hemorrhage. This is illustrated in case 1 of the series reported by Reuben and Claman. Before splenectomy enough blood should be taken from the donor for two transfusions, one immediately before operation and, if needed, one during or immediately after. Citrated whole blood is entirely satisfactory in stopping hemorrhage and easier to use in times of emergency.

The expected end results of splenectomy in children with idiopathic thrombopenic purpura may be seen from a study of table given in article. Although these results are most encouraging, it must be borne in mind that sometimes figures do lie. One cannot study the literature without wishing for more complete data as to the blood changes and more prolonged and careful follow up records. The painstaking work of such authors as Whippel, Spence and Williamson in summarizing end results is of the greatest value in the study of prognosis. Until more is known concerning the cause of this disease, there is no other way in which we can gain a safe impression as to the adequacy and permanence of splenectomy as a therapeutic measure.

The literature on splenectomy in idiopathic thrombopenic purpura in childhood contains reports of forty-five cases. Three more have been added by this paper.

Of these forty-eight patients now on record, 70.7 per cent showed good results; 16.8 per cent were definitely improved; 4.2 per cent were slightly improved, and 8.3 per cent died.

The establishment of a correct diagnosis is the chief indication for splenectomy.

The existence of acute hemorrhage is the chief contraindication, and even this may be overruled if repeated transfusions fail to arrest the bleeding.

It is suggested that the outlook may be improved by splenectomy performed earlier in the course of the disease.

Subcutaneous Tearing Injury of Jejunum. Brown, Rexwald. American Journal of Surgery, 7, pg. 717-718. November 1929.

Miss M. W., aged 19, entered the Cottage hospital as the result of an automobile accident. She was driving when her car left the road and turned over. She was unable to describe what happened. She complained of severe abdominal pain. Examination revealed a slightly rigid and tender abdomen and a slight bruise on the abdomen 4 inches long, extending from the left midcostal cartilage downward and outward toward the left lumbar region. Roentgenograms were taken of the chest and gave no information. The pulse was 80 and the temperature 97.4 F. The red cells were 4,520,000 and the whites 24,300. An hour later the patient vomited, the abdomen pain increased and the abdominal muscles became board-like. Pulse increased to 94. Several ounces of mixed bright red blood and urine were obtained by catheter. What was the injury? Some one of the viscera was certainly torn. We elected to explore the left kidney first in view of the haematuria, the location of the bruise and because abdominal rigidity sometimes occurs in kidney lesions. The kidney was elevated through a lumbar incision. A slight amount of blood extravasation was found in the tissues in and about the pelvis of the kidney, apparently from contusion. A left rectus incision was then made above the umbilicus. The peritoneal cavity was filled with blood. About 8 inches below the ligament of Treitz the jejunum was completely severed. Therefrom a lacerated bleeding wound extended deep into the mesentery. A small amount of intestinal contents exuded from the relaxed severed intestinal ends. No other pathological condition was found.

The two ends of the severed bowel were closed and a lateral anastomosis made between the distal and proximal loops. An end to end union was not made because the tear in the mesentery had destroyed the end arteries adjacent to the intestinal insertion and gangrene and necrosis loomed large. As peritonitis seemed probable an enterostomy as a vent for gas and faeces was made in the ileum. The patient had a fairly uneventfully recovery. Bowels moved normally after a week. She was in a wheel chair on the fifteenth day and went home in three weeks, all wounds healed.

The small intestine is affected by violence by one of three mechanisms. First, the bowel is compressed between the anterior abdominal wall and a hard area of bone like the spine or pelvis. Second, a tangential pull on the abdominal wall in the direction of the long axis of the intestine may make purchase on an intestinal coil and tear the lumen near naturally fixed points as the duodenal, jejunal or ileo-colic junctions. In this type the tear may extend into the mesentery. Third, the intestine bursts or explodes because violence causes a rise of hydraulic pressure within the lumen and this pressure is sufficient to overcome the resistance of the intestinal wall.

These traumatic lesions of the intestine caused by non-penetrating blunt force are not pleasant to reflect on. The mortality is very high. Nearly all cases not operated upon die; most of those operated upon too late die, and most of those operated upon early die because of the hemorrhage or peritonitis which follows the injury. The lesson to be learned is that early exploration should take precedence over watchful waiting when violent force has been applied to the abdominal wall.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,

and F. K. Garvey, M.D.

Medical Building, Knoxville

The Relation of Urologic Diseases to Internal Medicine. Harvey, G. Beck (J. Urol. Vol. xxiii, No. 2. February 1930).

The communication is based on a study of 284 urologic patients, who came into a private medical clinic, where they were studied chiefly from the standpoint of an internist.

Ninety per cent of the patients examined were chronic with an average duration of symptoms 6.3 years. Some gave a history of 20 or more years symptoms without ever having been referred to the urologist. He explains this by a lack of appreciation of the effects of disordered function of one organ upon other organs or upon the body as a whole.

"The question seems to resolve itself, largely to one of reeducation." "It is not more knowledge, which is needed at the present time, so much as a more universal application of what already exists."

He states that even though a larger per cent of accurate diagnosis are possible in urology than any other field, that autopsy records show that the largest number of undiagnosed lesions occur in the urinary tract. In a series of 1200 autopsies Carson found that the most frequent failures in clinical diagnoses occurred with lesions of the genito-urinary tract. Pleurisy with effusion second and endocarditis third.

There were 161 patients or 57 per cent whose chief complaint was gastro-intestinal. Many strictures of the ureter were found in this group. Several complained of symptoms suggestive of gastric or duidoneal ulcer, who were relieved by ureteral dilatations.

Eighty-two patients exhibited symptoms of functional, mental, and nervous disturbance.

About one-third of the group were of endocrine origin. There were 41 outspoken cases of hypothyroidism. Ureteral stricture, pyelitis, hydronephrosis, calculi, and neoplasms were common lesions found in this group.

Eleven patients had symptoms of cardiac disease. He cites one case of fibrillation relieved by pelvic lavage for a bilateral pyelitis.

Cutaneous lesions were often associated. One case of urticaria was permanently cured by clearing up a pyelitis, and another by removal of a pyonephrotic kidney.

Seven cases with ocular manifestations of disease were found to have their focus in the genitourinary tract.

Many cases with symptoms pointing to abdominal lesions and who had had multiple operations without relief were found to be suffering with ureteral stricture.

There were 137 abdominal operations in this series. The appendix was removed in 58 and without relief in 31.

Forty-eight had pelvic operations with no relief in 26. In all there were 60 operations without relief of symptoms.

In this series of 284 cases, 475 urological lesions were found. In 110 of this series the tonsils were the primary focus.

He urges a complete urological study on all cases, where the diagnosis is not clear. He states that the fault lies in the inability of physicians as well as the laity to recognize the necessity of urological examination and thinks the solution is a closer relationship of the internist and surgeon with the urologist.

Send in your application for space in the Physicians' and Surgeons' Directory. See Editorial page in August issue for information.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII APRIL, 1930 No. 4

CONGENTIAL POLYCYSTIC KIDNEY WITH A REPORT OF TWO CASES*

F. K. GARVEY, M.D., *and* TOM R. BARRY, M.D., F.A.C.S., Knoxville, Tenn.

POLYCYSTIC disease of the kidney is the most important congential anomaly of the genito-urinary organs. The condition is not rare, occurring with an incidence of about 0.4% in autopsied series made by various authors. There is no specific age incidence. It may be found at any age from the early embryo to extreme old age. Seiber in his collection of 244 cases finds the incidence greatest between the age of 40 and 60.

Frequently it is associated with other developmental malformations such as spina bifida, harelip, cleft palate, hypospadias, absence of the urinary bladder, etc., also cystic formation in other parts of the body, particularly the liver.

The hereditary aspect is at times striking, so much so that a family history is of much importance in diagnosis. Cummings found a familial history in 36% of his series of 31 cases. He reported a series of 10 victims, all of whom were blood related. Others have reported as high as 14 instances in one family. This hereditary tendency may be, as suggested by Cummings, partly responsible for the term congenital. Now, since the splendid embryological study of surgical pathology of kidneys by Davis, there is no further doubt as to the true meaning of the term.

The condition is manifested bilaterally in most instances. Probably about 10 times more frequent than unilaterally. Recent work on the fetus by Davis has shown that in unilateral cases or where one kidney is grossly normal, microscopic examination shows cystic formation in the other. Why one kidney should show advanced degeneration while the other is only potential, is not understood.

The etiology as yet is unknown. Various theories have been offered and the literature is full of reviews on these, but none has shown a conclusive explanation of all phases of the condition. The main ones are:

1. Virchows theory of the inflammation of the renal papillæ with atresia of collecting tubules causing cystic changes in Bowman's capsule.
2. Brigidi and Severi believed the origin to a cystadenomatous formation from epithelial sprouts or nests springing from the lining of the tubules.
3. Hildebrant in consideration of the embryological formation of the kidney being in two separate parts, concluded that cysts formed from a failure of the union of the cortex and medulla.
4. Davis concludes that the human polycystic kidney results from partial cessation of development at the mesonephric stage. He compares it to the kidney of the codfish and other lower animals which is normally mesonephric and polycystic in the full grown stage.

---

*Read before Knox County Medical Society.

Virchow's theory was exploded, since it has been proven that obstruction of a papillary duct causes atrophy rather than cystic degeneration.

The neoplastic theory also has been discarded because of the constancy of bilateral involvement. This is inconsistent with the usual new growth occurrence. The tendency for cysts and other anomalies elsewhere is not explained by this theory.

Hildebrandt's theory is the one generally accepted, yet recently Von Mutach and Bunting have demonstrated a direct continuity between cysts and tubules. Endigo carmine has been found in cysts after injection of ureters with dye.

Davis' theory is the most logical explanation of the condition, up to the present, and will probably stimulate further work along this line of investigation.

The pathologic study of gross specimens shows universal evidence of progressive degeneration. There is a marked tendency for hemorrhage and infection, particularly in adult specimens. Cysts predominate in the cortical and subcortical zone, the largest ones being found in the interlobular lines. The surface contour varies. It is always irregular, presenting many colors, due to the difference of thickness of the cyst walls, depth, and the various types of fluid within them. The size of the kidney may become enormous before death, or renal failure with death may come while it is small. Cummings found the fluid in all his cases to contain pus and blood. Braasch found hemorrhage in 40% of the cases seen at Mayo clinic.

Microscopically, sections show a distinct defective development and premature aging of the unit structures of the kidney. There is an incompleteness of assembling and a uniform cystic degeneration with consequent pressure atrophy. This is particularly striking in the adult type.

Davis divides the clinical course into three stages. The first or latent stage which may occur at either of two periods, the completion of fetal life, or between the age of 40 and 60. In either of these there is an enlargement of one or both kidneys without subjective symptoms. Diagnosis is rarely made at this stage. The second stage is characterized by subjective symptoms as well as objective signs. This period varies in duration from a few months to several years. The main symptoms are pain, hematuria, and the picture of chronic interstital nephritis which may manifest itself by any of the following symptoms: headache, dizziness, nausea, lassitude, loss of weight, etc. Infection may occur which is indicated by fever, pyuria, and bladder symptoms. The objective signs are: tumor mass, unilateral or bilateral, increased blood pressure, urinary findings characteristic of an interstital nephritis, lowered kidney function, and pyelographic changes.

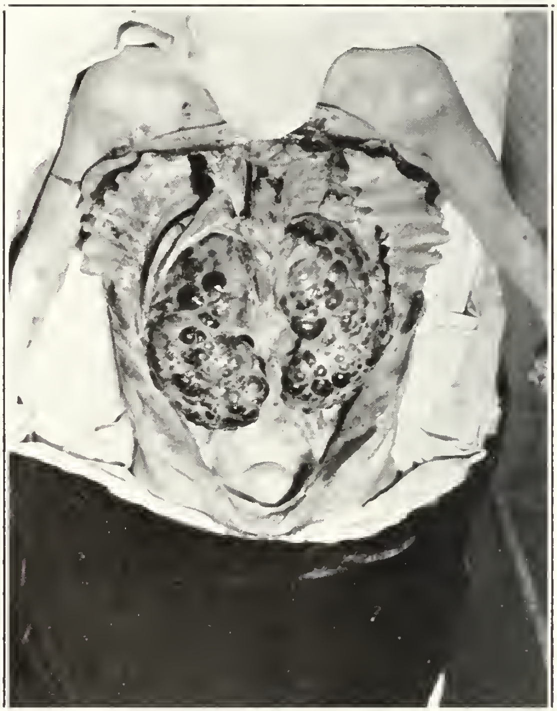


Fig. 1. Case No. 1. Kidneys in sight after removal of other abdominal viscara. They almost fill the abdominal cavity from the crests of the illia to the diaphragm.

The tumor masses are nodular and usually rise and fall with respiration.

Kidney function varies remarkably. Occasionally it remains good for years or until other signs are outstanding. It may come and go, frequently returning from a low ebb in time to prevent the patient from passing over into the third or uremic stage, which will be described later, but usually the excretion of dye is lowered early in the second stage and remains relatively low compared to other signs of insufficiency.

The third or uremic stage appears after the function of both kidneys has become very low. This is probably a result of cardiac failure caused by changes in the blood vessels of the kidney from pressure of the cysts. Anuria results and death soon follows, usually. Remissions may occur at this stage under proper medical treatment and the function partly returns for a time. However, they do not last long and death from some intercurrent disease usually follows.

The diagnosis is made from the clinical picture described and by cystoscopy with pyelography. The pelvic picture is not definitely always characteristic. Certain changes which are usually found are irregularity, narrowing or obliteration of the calices with change in the position or axis of the pelvis. The pelvis is usually lengthened, but never dilated as in hydronephrosis.

Treatment is mainly a medical problem, since the disease is progressive and certain in its termination with death, and consists of caution and care against exposure, overeating, exercise, etc., with a view towards prolonging life and providing comfort. Infection and hemorrhage of the kidney call for drainage and lavage. Elimination by other routes than kidneys must be encouraged. Nephrectomy of a unilateral involvement is usually to be condemned since it probably hastens the progress of the other side. Rovsing's operation for evacuation of the cysts may improve the function temporarily, but it, of course, is futile and hardly logical. Any treatment can only be aimed at keeping the patient comfortable preventing involvement of other vital organs and relieving the load on the impaired kidneys, thus increasing the length of life.

Case Report No. 1:

Mrs. H. L., age 31, married 13 years and has four children, living and well. The youngest child is one and one-half years of age. Father and mother are dead. Cause of death is undetermined. The patient had pneumonia at the age of 17, and flu in 1918. She had much edema of lower extremities during each pregnancy. Her health was always good otherwise, until three years ago.

The patient came in July 9, 1927, complaining of pain all through the abdomen. Was most marked in the right kidney region and radiated down the hips and thighs. Was accompanied by dysuria, frequency and swelling of the lower extremities. The onset was three to four years ago with gradual increased severity. Two and one-half years ago she began having low back pain, at which time she had a very painful delivery of her final pregnancy. Has had no gross hematuria, chills or fever. Passes large quantities of urine. Had painful and irregular menstruation. Appetite is fair. Occasional nausea and is always constipated. Has had attacks of shortness of breath frequently.

Examination revealed a well developed woman somewhat emaciated and anemic in appearance. Temperature was 98.6, pulse 86, respiration 24, and costal in type. A complete physical examination was not made at this time, but a general superficial examination showed nothing abnormal except on inspection and palpation of the abdomen two large firm nodular masses were seen and felt almost entirely filling the upper three-fourths of the abdomen. Though separated in the middle by only a narrow space two distinct and separate masses could be outlined and they appeared to be attached mainly in the region of the kidneys. The blood pressure was 180/130. The heart sounds were normal. There is no evidence of anomalies found. A blood picture was not made at this time. Urinalysis showed the urine to be straw colored with a specific gravity of 1.005, albumin 2 plus, sugar negative. Microscopically, it showed a few pus cells. The blood urea nitrogen was 58.31 mgm. per 100 cc. of blood, non-protein nitrogen 126 mgm. per 100 cc. of blood, creatinine 4.2 mgm. per 100 cc. of blood. Wasserman was negative. Cystoscopic examination showed the bladder to be entirely negative. The ureters were catheterized easily. Both kidney specimens showed no pus nor blood. No growth was obtained on culture from either side. A bilateral pyelography showed on the right an elongated pelvis with very little filling of the calices. On the left no shadow was obtained. Both catheters were curved in toward the spine up to the level of the pelvis where they sharply curved out again. A phenol-sulphon-phthalein test showed faint trace of dye on the left side in 9½ minutes and a faint trace on the right in 14 minutes.

With medical care the patient apparently improved and was not seen again until February, 1928, six months later. At this time she was admitted with the same symptoms as previously except her general appearance was not good. There was a loss of weight and an anemic appearance, not observed before. The masses in abdomen were more noticeable and slightly larger in outline. There was considerable tenderness on pressure. Menorrhagia and dysmenorrhea were present. A pelvic examination revealed nothing abnormal, except a first degree retroversion of the uterus. The kidney masses could not be palpated through the vagina or rectum. The temperature was normal and remained so during her stay in hospital. Blood pressure was 180/130. Urinalysis showed a large number of pus cells. Specific gravity was 1,008. a heavy trace of albumin, and a few red blood cells. Phenol-sulphon-phthalein appeared in the bladder urine in 15 minutes. The total output of the dye in one hour was 4.5%. Blood urea nitrogen was 65.47 mgm.

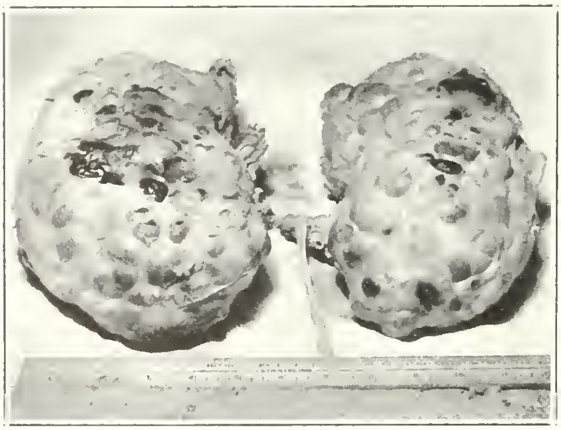


Fig. 2. Case No. 1. Same kidneys removed. Their weight is 3,360 grams.

Cystoscopy with pyelography showed no change. An outline of the left kidney could not be obtained.

The patient was discharged one month later much improved. The blood urea had decreased to 38 mgm.

She was readmitted three months later, with a return of symptoms. She was only having a moderate amount of pain, but general appearance was worse. There was no apparent change in the size of masses. She had lost some weight since previous examination. Her blood pressure was 150/100. Urinalysis showed albumin 3 plus, a large number of pus cells, a few red blood cells. Red blood count was 2,500,000. Hemoglobin was 38%.

She was cystoscoped and the kidneys were lavaged. She improved and was discharged one month later with gain in weight and relief in symptoms. The blood urea nitrogen was reduced to 41.6 mgm. The urinary findings were the same as on admission May 25, 1928.

Six and one-half months later she was readmitted in a very weak and anemic condition. The heart sounds were weak with a hemic murmur at apex. Had been vomiting for several days, and was quite dehydrated and toxic. The urinalysis showed a specific gravity of 1,005, albumin 2 plus, a large number of pus cells, a large number of red blood cells, no acetone, and no diacetic acid present. Blood urea nitrogen was 114.4 mgm. The white count was 13,311, with 78% polys. The red count was 1,250,000. The hemoglobin was 17%. The blood pressure was 144/68.

Glucose was given intravenously and one week later the patient was transfused with 500 cc. of blood. The red count increased to 1,300,000 and the hemoglobin to 25%. The blood urea nitrogen increased to 119 mgm. The patient was progressively becoming worse and on December 7th the urea nitrogen increased to 166.25 mgm. Lobar pneumonia developed the following day and the patient died.

Autopsy revealed the following: The kidneys were two enormous masses, nodular and cystic with a color variation from yellow to dark blue. The left measured 22x10 x11 cm. The right measured 25x12x10. They were removed without difficulty, apparently having few adhesions. The right ureter was markedly dilated. The left was apparently normal.

The liver was considerably enlarged and showed fatty degeneration throughout, accompanied by chronic passive congestion.

The left lung showed an acute pneumonic process of the lower lobe. Otherwise it was negative. The right side showed complete obliteration of the pleural cavity by dense fibrous adhesions. The entire lung except the apex was solid and non-airbearing and on section presented a grey purulent appearance. All other viscera were normal.

Case Report No. 2:

A female colored child, 14 months of age. Her father, age 25, and her mother, age 24, were living and well. She has six brothers, ages 6, 4, and 2 respectively. They are in good health. The patient entered the hospital August 8, 1923, with the complaint of loss of appetite, loss of weight, and diarrhea. First symptom began two weeks ago with loss of appetite followed some by loss of weight and for three or four days before entering hospital had had six to eight stools a day. A diagnosis of colitis was made and treatment started accordingly. A marked frequency of urination was noticed, but was attended by no pain nor bleeding. There was no history of past illness.

Physical examination showed the child normally developed, but markedly undernourished and dehydrated. Temperature was 101. Nothing else was abnormally encountered on general examination, except when going over the abdomen general distention was noticed. There was no tenderness nor rigidity. In the left costovertebral angle a mass could be seen slightly bulging. On palpation it felt to be the size of a small orange, firm and nodular. It was somewhat movable, but not painful. The Wasserman was negative. The urinalysis showed a lemon colored urine. The specific gravity was not taken. There was 1 plus albumin, 4 plus pus, no sugar nor red blood cells. The culture was negative. The blood picture showed 7,200 white cells, 2,440,000 red cells with hemoglobin 100%. After the patient's general condition became better under a few days of medical care, a cystoscopy was done under ether anesthesia. The urethra was completely relaxed, and the bladder would retain no fluid. The bladder was apparently normal. The ureteral orifices were not found. Four days later another attempt was made, but the left ureter could not be catheterized. A tentative diagnosis of kidney tumor was made and on October 3, 1923, a nephrectomy was done, under ether anesthesia. The kidney was found to be about the size of a small grapefruit, with multiple thin walled cysts over the entire surface. These cysts varied in size from one-half to three-fourths cm. Was removed intact. On section it was found to be cystic throughout with the typical polycystic appearance. Microscopic sections confirmed the diagnosis of polycystic kidney.

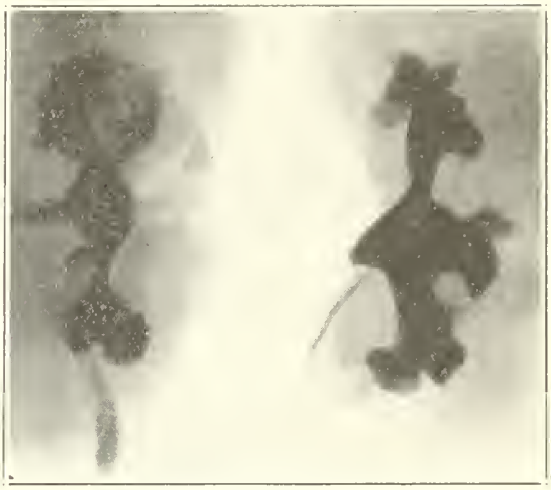


Fig. 3. Case No. 1. Pyelographs made after removal of kidneys. Injection was made under considerable pressure.

All symptoms were relieved and an uneventful recovery followed. The general prognosis of the patient was kept in touch with through the social workers and was reported good all along.

Six years later at our request she was readmitted to the hospital and a pyelograph of the remaining kidney made. There was found some enlargement of the pelvis and calices, which we judged to be normal for a compensated kidney, but no evidence of cyst formation. Urinalysis showed a trace of albumin, a few pus cells, and no red blood cells. The culture was negative. The phenol-sulphon-phthalein appeared in 5½ minutes. The blood urea nitrogen was 18 mgm. There was no urinary symptoms and the child appeared to be normal in every respect.

The object in reviewing briefly this interesting type of kidney condition is to refresh our minds on the general picture of the disease, bring forth the newer conception of the biological aspects of it, and by reporting two contrasting cases of the disease, show that we are not always dealing with a condition that cannot be made better by early diagnosis and treatment. Case No. 2, though potentially a bilateral involvement, probably, is alive and well six years after the removal of the diseased kidney. Had the case been diagnosed before operation and the modern concept and teaching had been followed out in its handling, a painful existence would have been the course over this period, if not death, while waiting for the inevitable bilateral role to be assumed. As it is, now, we hope for its delay as long as possible, feeling that there is a possibility of its never coming.

Case No. 1 is the usual type encountered, being bilateral, the age in the fourth decade, and sufficient progress in degeneration to where symptoms and signs are outstanding. Diagnosis is easy, but the treatment is more of a problem. It consists mainly of preventing a passing over into the third stage. This, of course, means a preservation of other parenchymal organs as long as possible, promotion of vicarious elimination, and prevention against intercurrent diseases, etc. Further than this we have nothing to offer in the alleviation of the fatal condition.

In conclusion something might be said in regard to the handling of unilateral cases. When a diagnosis is made early and the general condition of the patient is good, probably the wise thing to do is to keep the patient under observation, watching the other kidney. Should urinary symptoms, such as infection, blood, burning, etc., develop, and the kidney become large enough to produce pressure symptoms, removal is indicated, provided the other kidney shows no involvement. Further than this we think surgery is never indicated in polycystic kidney disease.

REFERENCES

Cummings, R. E.—Polycystic Kidney Disease. (Journal Urology, Feb. 1928).

Braasch, W. F., and School, A. J.—Pathologic Complications with Double Kidney. (S. G. & O. vol. xxv, 1922).

Davis, J. E.—Surgical Pathology of Malformations in the Kidney and Ureter. (Journal Urology, July 1928).

Davis, J. E.—Surgical Pathology of Malformations in the Kidney and Ureter. (Journal Urology, August 1928).

Davis, J. E.—Surgical Pathology of Malformations in the Kidney and Ureter. (Journal Urology, September 1928).

Bunting, C. H.—Congenital Cystic Kidney and Liver with Family Tendency. (Jour. Exp. Med. 1906, viii, 271).

Rovsing—American Journal Urology, 1912, viii, 120.

"CANCER OF RECTUM AND RECTO-SIGMOID"*

By JOHN B. HASKINS, M.D., F.A.C.S., Chattanooga

MY reason for writing a paper on this subject is that it is a most neglected one from the standpoint of diagnosis.

I have had nineteen cases of cancer of the big bowel; two of the ileo-cecal coil, one of the transverse colon, and sixteen of the recto-sigmoid and rectum. All of these cases were in bad shape when first seen by me. All of these cases were not proven pathologically to be carcinoma, but certainly had all the clinical symptoms. These patients ranged in age from 26 to 70.

One of the last cases that I saw was hospitalized for a week or ten days with an expenditure of $100, having had a gastro intestinal x-ray and rectal enemas for x-ray, when all that was needed to make a diagnosis was to insert the finger into the rectum. Just why doctors are so esthetic that they cannot at least insert a gloved finger down into the rectum and use an electric proctoscope I am unable to say. Down right laziness would be the best term to apply to the above class of physicians.

It has been said that forty per cent of the cases of cancer of the rectum and recto-sigmoid have been operated on for either hemorrhoids or fissures, and of course without relief.

Quoting Dr. W. J. Mayo: "The true rectum lies between the levator ani muscles and the third sacral vertebra, and consists of the so-called second part of the rectum, as designated by American Authors. It is derived from the cloaca, which is a highly differentiated part of the hindgut, and has five sources of blood-supply, all of which may be accompanied by lymphatics. The superior rectal and the middle hemorrhoidal arteries contribute the main blood-supply, however, and the lymphatics, which are scanty, usually pass along with these blood-vessels by way of the rectal, sacral, mesosigmoid, and the internal iliac glands to the juxta-aortic group."

The rectum proper has no mesentery, and only a small part of its anterior surface is covered by peritoneum; it lies in the fatty supporting tissue inside the rectal fascia, between the genito-urinary organs ventrally and the sacrococcygeal framework dorsally. Carcinomas of the true rectum are covered by peritoneum ventrally to some extent in more than half the cases. The type is adenocarcinoma.

The so-called first portion of the rectum has been shown by Treves and Jonnesco to be the terminal portion of the sigmoid derived directly from the hindgut, and its lymphatics pass to the aortic group by way of the mesosigmoid, following its single source of blood supply. All the growths in this situation are covered by peritoneum ventrally. The type is adenocarcinoma. Only 24% of rectal cancers lie completely below the peritoneum.

The so-called third portion of the rectum is derived from the ectoderm or skin-fold, and its lymphatics drain into the inguinal and coccygeal glands, as well as upward into the rectal glands. The anal canal is about 1½ inches in length, contains no glands, and is lined by pavement epithelium. This part is the primary source of malignant disease in about 6 per cent of the cases of cancer of the rectum. The type is epithelioma.

Handley has shown that carcinomatous implantation may be found in the bowel 6 inches above the visible expression of the disease. Fagge has demonstrated, in two cases, an extension downward into the lymphatics of the anal canal, without visible involvement of the canal itself. In Fagge's opinion the entire anal canal should be removed when the carcinoma has its origin in the rectal ampulla.

McVay (Annals of Surgery, December, 1922) studied the specimens of 100 consecutive cases of cancer of rectum removed at operation. In 53% he found no gland involvement, in 30% slight, and in 17% extensive gland involvement. The glands examined were those closely associated with the lesion, the more distant glands were naturally not available.

---

*Read before East Tennessee Medical Association, Tate Springs, Tennessee, May, 1929.

Now, it is well known that the lymph circulation does not of necessity flow from gland to gland in series, but that lymph channels from the same area may pass into different glands in a chain, some into proximal glands but some directly into the more distant glands.

Mr. W. Sampson Handley, F.R.C.S., Richand Hollin's Cancer Research School; Middlesex Hospital; Women and Children's Hospital and Guy's Hospital, London, England, said in an address on cancer of the rectum at the Interstate Postgraduate Medical Association in Cleveland in 1926, "I have always kept away from the big problem of the causation of cancer, feeling that various minor problems of the disease must be solved before the main mystery can be attacked. It is useless to attempt to get up Mount Everest without climbing the foothills. But it seems unlikely that I can do any further service to the subject by laboratory work, and I feel that it may be a help to future workers if I bring forward some facts and observations accumulated over many years and tending to show that chronic lymph stasis, however caused, is an important factor in determining the onset of malignant growths.

A typical instance of mechanical lymph stasis is the common prolapse of the rectal mucous membrane so often seen in middle-aged persons. The prolapsed fold of mucous is blue and congested from pressure upon veins and lymphatics. In such cases I have not infrequently seen upon the prolapsed fold small papillomata often attached by a narrow base.

These are the first indications of the effects of lymphatic obstruction upon the epithelium, and as you know the rectum has general mechanical conditions which favor lymph stasis to the utmost.

It is a fair assumption from this close association between papilloma and carcinoma that the causes which produce a cancer are similar in nature to those which produce papilloma, but that to produce cancer they must act for a longer period and perhaps with greater intensity.

W. E. Miles has found in certain cases, freedom from involvement of the ano-rectal group of glands but metastases in the retrorectal or even in the paracolic groups.

In the treatment of cancer of the rectum a misplaced and wholly unnecessary sentimental consideration for the individual with a permanent colostomy must give way to that mental attitude with which we have been at least comparatively successful in combatting cancer of the breast, viz: wide and radical removal of the local lesion, with extirpation of the lymphatic drainage system, glands and intervening channel bearing tissue.

To intelligently grasp the significance of symptoms as they appear it is well to visualize the pathology of a lesion. For the purposes of this discussion it is sufficient to divide carcinoma of the ano-rectal region into three classes:

(a) Epithelioma of the anal region.

(b) Ulcerative carcinoma of the rectum proper.

(c) Scirrhous carcinoma of the rectum or recto-sigmoid junction.

In epithelioma of the anal region the patient early complains of pain and discomfort especially upon defecation or any act requiring altered tension of the sphincter.

Arising, as it must, from that portion of the anal canal distal to the "white line," which is formed from the proctoderm (or infolding of the skin surface to meet the hindgut) the growth assumes the characteristics of skin cancer elsewhere, i. e., infiltration and induration resulting in loss of elasticity. Because of this loss of elasticity there frequently results a fissuring or tearing during the act of defecation.

Hence the typical symptoms of fissure ani appear, e. g., cutting pain on defecation, possibly slight bleeding, painful spasm of the sphincter, reflex inhibition of bowel evacuation with consequent constipation.

Digital examination will reveal, in addition to spasm of the sphincter and tenderness, an induration which may be regional or annular. Indeed, the spasm and pain may be so extreme that satisfactory examination cannot be made without the assistance of some method of anaesthesia or analgesia.

A chronic fistula may be the etiologic factor predisposing to epithelioma of the part and the latter condition may become superimposed upon the former.

Here again, infiltration and induration are suspicious findings. True, in chronic fistula there is much induration but it is fibrotic or cicatricial and affects the submucosa and deeper layers—whereas, in epithelioma whether primary or superimposed on fistula the mucous membrane itself is infiltrated.

The term "early" as applied to carcinoma implies not so much duration as localization. So long as the disease remains local there is hope of permanent cure by radical removal. But if metastases are present, the prognosis becomes one of grave import.

Robert B. Greenough, M.D., Boston, has said, "With our present resources alone some 70-80% of cases of accessible cancer can be cured and we now fail to cure more than a quarter of that number. There must be no delay on the part of the patient in seeking advice immediately upon the discovery of symptoms which are even suggestive of cancer. There must be no delay on the part of the physician consulted in obtaining an immediate diagnosis either by examination, by consultation or if necessary by exploratory operation."

Hence it is important to appreciate that in epithelioma of the anal canal the lymphatic metatasis drain primarily to the inguinal glands. Where there is considerable inflammatory reaction associated with the tumor the lymphatic enlargement may not necessarily be malignant, therefore its presence on one or both sides does not necessarily preclude an attempt at radical removal.

In the second class—the ulcerative type—we have the signs and symptoms of an irritative lesion. The most common site is the anterior wall of the rectal ampulla.

For a variable period prior to breaking down and ulceration, with the appearance of blood in the stools, there is a catarrhal proctitis, local to begin with but spreading to involve considerable area. This results in increased mucous secretion which is evidenced in the stools if the latter be observed.

The subjective signs are a sense of fullness in the rectum, the desire to defecate frequently with the expulsion of small semi-solid or fluid defecation, discomfort in the lower abdomen, sometimes a dull aching pain in the sacral region, and frequently a slight colic or cramp immediately preceding the desire to evacuate. In fact, the signs of a mild mucous colitis or more especially of a proctitis.

Dr. Daniel T. Jones of Boston said: "It is true that the early symptoms are very difficult to get at. In the first place, they are so slight that the patient pays very little attention to them. In the second place, the family physician has very little interest in these cases and as the intestines are a little upset the patient is nowadays given oil, some cathartic, and put off a long time because he or she is much more comfortable.

It is unfortunate, in a way, that mineral oil has come into existence, because it has put off the early operation upon many of these cases. The early symptoms of carcinoma of the colon are very slight indeed, that is slight irritability of the colon, perhaps a little more frequent movement than usual, perhaps rather more gas in the intestines, and that is about all in the way of symptoms.

If we examined the stools in these cases, we would, I think, find blood in quite a large proportion of cases, provided the examination was made frequently.

Aside from this simple irritability of the colon and the blood in the stool we find very little else. We should, of course, at this time have an x-ray examination, but x-ray examinations by the average man are very deceiving in early cases of carcinoma of the colon.

From the irritability of the colon these patients go on to an increasing constipation, and it is here that the oil plays havoc, the patient gets oil, the stools are softened and go through the narrowing very easily, and therefore the symptoms are relieved for the time being. From this point on, the symptoms of carcinoma of the colon are symptoms of chronic obstruction of the colon."

Later when the growth ulcerates, blood in variable quantity appears in the stools. There may be nothing more than a streaky staining of the mucus mixed with the stool. In other cases the amount lost is considerable—of a bright or dark red color and mixed with mucus and grumous detritus. Frequently this discharge has an offensive putrid odor. The anaemia which develops in the patients is undoubtedly due to this continued blood loss.

There are two divisions of this class of ulcerative cancer. One in which there is a deep craggy ulcer with indurated overhanging edges but with little or no tendency to project into the bowel lumen; the other which proliferates rapidly and although ulcerating and losing substance it projects as a cauliflower mass in the bowel canal.

The signs of obstruction are therefore rarely met with even when the lumen is to a great extent encroached upon by the proliferating mass or where the ulceration is annular and completes the circle of the mucosa.

There is seldom any difficulty in reaching a diagnosis by digital examination. In almost all instances the mass is situated within reach of the average finger. But, how frequently this simple examination is neglected or done perfunctorily. It is absolutely necessary that an examination should be persisted in until a condition is revealed which explains, not one, but all of the signs and symptoms present.

A pit which is frequently dug for us is the associated haemorrhoidal condition which develops secondarily to the frequent stools with tenesmus or straining in the attempt to get rid of the sense of fullness.

But although the finding of haemorrhoids will explain the blood loss, they cannot be held responsible for the other signs, e. g., cramp preceding bowel movement, frequent stools with mucous, grumous material and putrid odor. A routine proctoscopic examination should be made preceding operation on simple haemorrhoids.

In the third class we deal with the scirrhous annular type of carcinoma.

Developed to the highest degree in the sigmoid, these growths are also found at the rectosigmoid junction and occasionally in the upper part of the rectum. They may be very definitely termed the "silent" cancer of the rectum. Although in the majority of instances, ulceration is present, it is of a very superficial character and because of the poor vascular supply which is choked off by the cicatricial contraction, there is very little if any perceptible bleeding to hang out the "danger signal."

Hence diagnosis must be made largely by deduction.

The lesion is an obstructive one, because the growth obtrudes into the lumen of the bowel, and because of the characteristic fibrous tissue reaction with cicatricial contraction. Hence before any symptoms appear the disease must have been present for many months.

Frequently the patient fails to take warning until complete obstruction supervenes. But chronic incomplete obstruction must of necessity precede complete obstruction. The effects of chronic incomplete obstruction are both local and general.

Local—Increasing difficulty in obtaining satisfactory bowel movement—with recourse to purgatives to render the stools fluid.

Abdominal distension with increase in girth.

Colic-like pains, flatulency, borborygmus, visible and palpable peristalsis. All due to an increased peristalsis with hypertropy of the muscles of the bowel wall in an attempt to overcome the resistance of the obstruction.

Pain in the right lower quadrant, due to distension of the caecum.

General symptoms are those of intestinal intoxication due to the stasis. Loss of appetite, digestive disturbances, with consequent loss of weight, loss of tone, pallor and muddy complexion, and excessive fatigue.

Loss of weight together with increase of girth is considered pathognomic of chronic obstruction.

Visible and palpable peristalsis are the two most regularly present and valuable signs.

Visible peristalsis denotes increased peristalsis but requires an abdominal wall thin and atonic to permit of the movements being seen. It does not necessarily imply obstruction as it is observed perhaps most frequently in marantic infants with diarrhoea. But palpable peristalsis, by which I mean an alternate hardening and relaxation of the bowel under the palpating hand is another sign pathognomonic of only one condition, i. e., chronic obstruction. It requires for its presence, first, an hypertrophy of the muscle layer of the bowel wall, and second, excessive action on the part of this hypertrophied muscle. It is therefore never observed in acute obstruction as there has been no time for hypertrophy to develop.

But the warning of these signs may be neglected by the patient or his physician and complete obstruction may suddenly supervene. This may be developed in two ways—active and passive.

In the active form the complete occlusion of the stenosed segment occurs suddenly—it may be from blocking by vegetable fibre, or fruit skin, occasionally from impacted faeces. Usually it is due to a sudden increase of oedema or inflammatory reaction following upon reinfection through the ulcerated area.

The symptoms are stormy, violent peristalsis of the proximal hypertrophied bowel musculature with colic, vomiting and distension. Enemata may relieve if a body blocking the lumen can be thus displaced, but they are ineffectual in the face of a block caused by inflammatory oedema.

In the passive form the onset is insidious. There is complete cessation of bowel movement or flatus with gradually increasing distension. There is absence of all colic or other signs of peristaltic activity, vomiting is entirely absent or late in appearance. There is anorexia and the patient becomes progressively toxic.

The explanation of this type is that the hypertrophied musculature of the proximal bowel wall can no longer meet the increasing load thrown upon it. It refuses to work—dilatation occurs. The condition is quite comparable to that of decompensation in an hypertrophied heart.

Enemata here, although possibly partially effectual, are of no real avail in the absence of peristalsis. Distension and stasis are not relieved.

Measures to stimulate peristalsis may be tried—such as Infundin or Eserine intramuscularly but little time should be lost in this way unless definite results are obtained.

Differential diagnosis—this condition may be confused occasionally with syphilitic stricture or gumma, but a well taken history, clinical findings and tissue examination should clarify the diagnosis. It must be remembered that carcinoma will oftentimes give a 4 plus Wasserman. If the above should not clear up the diagnosis you could apply therapeutic test by pushing active antisyphilitic treatment for a few days. If the condition is Luetic there will be a marked improvement, but if it is carcinoma of course there will be no change.

Treatment—must be divided into Curative and Palliative.

Curative treatment demands an operation which widely removes the primary growth together with all the lymphatic channels and glands through which the area of primary growth drains.

It matters not whether one adopts an abdominal-perineal resection as advocated by Miles—or a perineal resection as advised by Lockhart-Mummery.

In both the abdomen is first opened to permit of thorough exploration thereby determining the presence or absence of liver metastasis, advanced glandular metastasis or peritoneal involvement, conditions which forbid radical operation of any kind.

In both a permanent inguinal or trans-rectus colostomy is established, and there is no attempt to preserve the anal canal with sphincter (a dangerous procedure as regards local recurrence) or to establish a sacral anus which results in nothing but discomfort and misery to the patient. (Bazin.)

Each operation has its definite indications. In cancer high in the rectum or at the rectosigmoid junction, or in cases which upon exploration by laparotomy involvement of the retro-rectal glands, the abdomino-perineal resection with removal of the paracolic glands is required.

In cancer low down or in which the laparotomy exploration reveals no involvement of the retro-rectal glands the perineal resection is sufficient.

Extreme old age, measured not in terms of years but of senile change, is also a contraindicaton.

Great emaciation and grave anaemia must be suitably treated before the radical operation is attempted.

This preparatory treatment in the delibitated consists of colostomy to put the rectum at rest, thus lessening blood loss and exhaustion, and blood transfusion to quickly raise the blood value.

In desperate, almost moribund patients —a caecostomy under local anaesthesia is all that should be attempted. Within 24 to 48 hours this should be followed by colostomy, either of sigmoid or tranverse colon, as caecostomy is frequently inadequate to drain effectively the left colon.

No manipulation or exploration is at this stage permissible.

With alternative constipation and paradoxical diarrhoea as seen in the annular scirrhous carcinoma of recto-sigmoid and upper rectum. The patient rapidly becomes exhausted especially during the period of diarrhoea. In addition there is the ever present danger of the very active peristalsis, particularly after purgative medicine, resulting in a tear, partial or complete, of the oedematous tissues at the proximal margin of the stricture with perforation and peritonitis or penetration and paracolic abscess.

Colostomy relieves and prevents and should be done early.

Ulcerative lesions in the ampulla—The margin of the ulcer is extremely sensitive, hence the painful defecation. The mass is friable, hence the blood loss with each stool.

Colostomy relieves. But do not expect relief from that pain associated with involvement of the sacral plexus in far advanced local extension of the disease.

Lesions of the Anal Canal—Here not only is defecation a torture but spasm of the sphincter is almost constant.

Colostomy is here indicated and in addition a linear proctotomy dividing the sphincter.

There is a widespread antagonism to a "colostomy life." This is largely sentimental and must be combatted. Dr. Mayo says, "The functional incapacity following the operation must be accepted by the patient as the price paid for the cure."

A properly performed inguinal or trans-rectus colostomy is not an affliction. The incision should be small (not the exploratory wound). The spur should be well formed and effective. Pouting of the mucous membrane should be controlled by radical cauterization. Offensive odors are easily prevented by diet, withdrawing all meat foods, restricting fish and eggs, giving in abundance cereals, fruits, vegetables, breadstuffs, milk foods and nuts.

Summary—First: If this resume of the literature and my limited experience on nineteen cases will stimulate us all to an earlier investigation and recognition of these cases this paper will be well worth while.

Second: We must be honest with these unfortunates and inform them that the best results in the vast majority of cases are obtained with a permanent colostomy even though disagreeable with radical removal of growth and all the surrounding gland bearing tissue is by far the best way of dealing with this dreaded disease.

SOME OBSTETRICAL STATISTICS IN NASHVILLE AND DAVIDSON COUNTY

L. J. CALDWELL, M.D., Nashville, Tennessee

IN 1913 the State Legislature of Tennessee enacted a law, Chapter No. 30, Senate Bill, No. 294, known as the Vital Statistic Law, which went into effect in 1914. An Act to provide an effective system for the keeping of records of all births and deaths in Tennessee and to provide penalties for the violation of this Act. A penalty of from $5 to $50 for failure to comply with any requirements of this Act. Test cases have been made and sustained by the unanimous opinion of the Supreme Court, and so ruled by Chief Justice Grafton Green. In addition to the general reasons for authentic records of deaths and births in a State there are numerous small features which are of interest that might be mentioned. This is the only Certificate that the United States Government will recognize in settlement of war veterans' claims of dependencies, children whose births were recorded under this system are accepted as authentic without further question. It also has a bearing in the age of school children under Child Labor Law, admission to work in factories at specified ages, color, race, nationality, legitimacy, or illegitimacy of offspring. An interesting case which occurred a few years ago, if a little more recent would have been within the shadow of the War Memorial Building, the present home of the Vital Statistic Bureau. This was one in which a mother was delivered of an illegitimate child. The doctor signed the birth certificate and sent in, stating that the child was an illegitimate. Several years later the father, dying, left the bulk of a large estate to this illegitimate child. The relatives of said father endeavored to break the will, but the certificate of birth filed at the Bureau of Vital Statistics was upheld, and the child retained the property. Sounds like fiction, but is vouched as a bona fide true case by one of the chief officials of the bureau.

The forms of birth certificates, as all of you know, who do any obstetrics, are similar to a bank check book, a certificate to be filled, and sent in, and a stub to be filled, and kept for personal records. I have stub records of birth certificates since this law was enacted in 1914 to date, in the order I delivered them, which is of interest and has been very useful for references to a number of my patients as well as myself.

For the past six years I have kept in touch with the work done in the birth records of Davidson County, going over the files for the city and county. In 1922 the total number of births for the county, city included, was 3,300, while my last survey for the year 1926, four years later, was 4,300, or a gain of 1,000 births in four years.

The birth certificates are required to be sent in within ten days. But the very few doctors comply with this requirement, some undoubtedly failing to send in some of their certificates at all, as I have gone over the records of the hospitals also, and in more than one instance have noted an individual doctor was attending quite a number of cases and failed to show corresponding number of birth certificates on file. But the city and county health authorities have gotten so warm after this matter that they are coming in better, and the returns show a fairly definite index of the work being done.

SOME LOCAL OBSTETRICAL STATISTICS FOR THE YEAR 1926

The total number of births in Davidson County complete for the year 1926, was 4,325, as follows:

Born alive, in city, white		2,285
Born alive, in city, colored		787
Still born, in city, white	107	
Still born, in city, colored	95	202
Total		3,274

Born alive, in county, white		935
Born alive, in county, colored		90
Still born, in county, white	19	
Still born, in county, colored	7—	26
Total		1,051
Total still born		228
Total births		4,325

Total puerperal maternal deaths for the year 1926—City 33; county 5; total 38.

Of the puerperal maternal deaths in the city 17 were non-residents, 16 residents, due to serious cases which were brought to the hospital for attention. These deaths as classified by the city health officers were as follows:

Septicaemia was cause of death of 8.

Eclampsia was cause of death of 6.

Hemorrhage, nephritis, acute yellow atrophy of the liver, pneumonia, myocarditis, peritonitis, were the other causes.

Of these 4,325 cases delivered, 901 were delivered in the five hospitals of the city, as follows:

First, St. Thomas Hospital, 347 cases.
Second, General Hospital, 268 cases.
Third, Protestant Hospital, 124 cases.
Fourth, Vanderbilt Hospital, 117 cases.
Fifth, Baptist Hospital, 45 cases.
Total, 901 cases.

The total number of caesarian sections for the year in the above five hospitals were 20, as follows:

First, Protestant Hospital, 7.
Second, Baptist Hospital, 5.
Third, St. Thomas Hospital, 4.
Fourth, Vanderbilt Hospital, 3.
Fifth, General Hospital, 1.

The maternal mortality in these 20 cases of caesarian section was 20 per cent; infant mortality 25 per cent.

The indications for operations of caesarian sections in these 20 cases were as follows:

9 Eclampsia.

4 Placenta Previa.

3 Contracted or Deformed Pelvis.

1 Fibroid Tumor and Pregnancy.

1 Accidental Hemorrhage, ablattio Placentæ.

1 Breech position associated with toxemia in a primipara.

1 T. B. patient, twin pregnancy and toxemia.

The total number of Internal Podalic versions performed in the five above hospitals for the year 1926 were 35, as follows:

General Hospital, 15.
St. Thomas Hospital, 8.
Protestant Hospital, 5.
Vanderbilt Hospital, 5.
Baptist Hospital, 2.
Total, 35.

Could not get all the data on mortality. What I did get run high in infants. In the General Hospital where the largest number were done was one maternal death and nine fœtal deaths in the 15.

The total number of Forceps Deliveries in the five hospitals was around 140.

The total cases of Eclampsia recorded in the five hospitals were 15, as follows:

General Hospital, 4.
St. Thomas Hospital, 4.
Protestant Hospital, 4.
Baptist Hospital, 3.
Vanderbilt Hospital, 0.
Total, 15.

The maternal mortality of these 15 cases was four deaths with seven fœtal deaths. Nine of these 15 cases were operated by caesarian sections, the other six by internal podalic version and forceps.

Impressions deducted from the above surgery are that Nashville and Davidson County obstetrics were not bad for 1926.

To recapitulate, she produced about 4,000 babies, actually 4,300, 228 of which were born dead, about three-fourths or 3,000 were born in the city, one-fourth or 1,000 in the surrounding county, with a total of 38 puerperal deaths, or about 40 to 4,000, or about one per cent maternal mortality, with 228 still born babies in the neighborhood of 5 per cent mortality for infants.

Of these four thousand cases, 900, or nearly one-fourth, were cared for in local hospitals.

Of the 900 in hospitals were 20 caesarian sections, with four deaths to mothers, the largest number for operation and death being due to Eclampsia. Second due to placenta Previa, third to contracted pelvis.

The total number of internal podalic versions for the year were 35, both caesarian sections and internal podalic versions were used sparingly and conservatively, and only for some strong indication, and not as a choice of technique. We very readily see from this survey that there are few Irving Potter's operating in the field, the largest number of internal podalic versions done by any one operator on record for the year was nine cases.

Would like to make a brief survey of my personal cases for the year 1926. My obstetrical cases for 1926 were unique. First in that the primaprias were in majority, being 76 primaprias and 73 multiparias, which in a measure accounts for the increased number of abnormal cases of 149 cases; 112 are normal, 37 abnormal; about 30 of the primaprias were illegitimate, unmarried girls, in two maternity homes. There was one caesarian section for Eclampsia.

There were nine internal podalic versions.

There were 24 forcep deliveries for malposition disproportions, and Eclampsia. There were five inductions of labor by the use of the rubber bags for Eclampsia and pre-Eclampsia.

There were two maternal deaths, both brought in moribund.

No. 1—Mrs. Newton Brown from Monterey, Tenn.; seven months pregnant, was brought to St. Thomas Hospital with pneumonia, went into labor second day after; died third day with pulmonary œdema following birth of dead child. This case was not seen until the day carried to the hospital.

No. 2—Mrs. Ben Shelton, 16-year-old primapara, brought from Antioch, Tenn., in eclamptic coma, following a day of convulsions. Caesarian was performed, removing the dead fetus, mother dying a few hours later, never regaining consciousness. Did not see this case until she was brought to the hospital.

Of seven infant deaths, two were for the above mothers, one pneumonia, one eclampsia, three others eclampsia whose mothers survived. Two children persistent occipito-posterior positions in primaparias with axis-traction forceps used in one, internal podalic version in the other. Both were very difficult cases to deliver, and death was probably due to trauma of delivery in both instances, as no toxemia poison in the mother in either case, and strong fœtal heart sounds in both cases prior to delivery.

Among the 112 normal classified cases there were four cases of pyelitis. In this series all responded to medicinal treatment and carried to full term without pelvic lavage or anything more than rest in bed, posture, water freely, medicinal treatment. All went to term and were delivered normal.

There were also twelve of these cases who ran blood pressure from 130 to 170 on which intensive pre-natal care was carried out; rest, diet, alkalies, purgation, magnesium sulphate, and in five cases induced labor all delivered normal.

THE PROBLEMS OF THE RECOVERED PSYCHIATRICAL PATIENT*

By EARL D. DORRIS, M.D., Western State Hospital, Bolivar

THE purpose of the present paper is to very briefly discuss the problems that confront the recovered psychiatrical patients after they have been discharged from the hospital and returned to their home, their family, and their community, to take up their abode in the social life where they left off prior to admission to the institution. We cannot begin this subject by going into the prevention of nervous and mental diseases, but the prophylaxis will of necessity be mentioned later. It is the belief of a great many psychiatrists, and in fact it has been proven by the committee on statistics of the American Psychiatric Association in collaboration with the department of statistics of the National Committee for Mental Hygiene, that insanity is on the increase.

Statistics show that the proportion of the insane to normal individuals, exclusive of mental defectives, is one per three hundred of the population. Seventy-five thousand new patients are admitted yearly to our hospitals and as a result we find that all state hospitals are filled to utmost capacity, and many are overflowing. It is true that people are realizing the advantage of early commitment of patients to state hospitals and this is credited as being one of the reasons for the present over-crowded condition.

Our State Hospitals are built to care for only a definite number of patients. We must not expect enough deaths, nor indeed do we have enough deaths, to counteract or equal the number of admissions of acute cases of insanity, and in this way keep the population below the maximum, but we must resort to discharges in order to strike the right medium in producing the necessary movable population.

The discharges we are considering here are only those of the recovered patient and by recovery we do not mean that they are forever cured of their mental disorder, or that they will never feel the brand of the residue of their psychosis, but that they are able to go back to their home, and if allowed, take up their place in their previous social life, in spite of the stigma which may stamp them as a peculiar type of humanity.

It is appalling to think of the number of cases in which we cannot secure the cooperation of the patient's family in removing him from the institution after the recommendation has been made by the staff that they are ready to be discharged. Two cases actually happening in our hospital within the last few days are excellent illustrations of this difficulty. A son was notified that his father was sufficiently recovered to return home and once again resume his place in his family and community, and yet in no way be a source of irritation to his neighbors. An immediate reply was had from the son saying: "Do not discharge father under any circumstances, I am afraid for mother to live with him." In the other case the wife was notified in a similar manner that her husband was able to be discharged. After two or three days she came after her husband and very happily told the attending physician that she was so glad to carry him back home, that she was not able to support herself and the little ones. The gentleman who furnished the transportation for this poor woman called the doctor aside and volunteered the information that there were some of the patient's neighbors who were afraid of him and if he went back home he would likely be shot and killed. These examples are only two of many.

Poverty is a very great handicap in securing the discharge of the recovered patient. It is also a cause of relapse and frequently sends the patient back to the hospital. Poverty is especially a predisposing factor in the case of the recovered female, as is childbirth. The woman goes home and brings into the world, unwillingly, another innocent life, and the strain of this and the subsequent lactation sends her back to the hospital.

---

*Read before Madison County Medical Association, Jackson, Tennessee, October 2, 1928.

The longer the patient remains in the institution the harder it is to adjust himself to his new environment after he goes back home. Other members of the family have managed the economic and social affairs of the home for such a long period of time that when father or mother return the children are not willing to resume a subordinate place in the affairs of the family. The recovered patients are thought of in a medieval manner. They are looked upon with suspicion, are constantly watched and it is a contest between the neighbors to see who can first detect some abnormality which may indicate a return of the psychosis and thus again cause them to be committed to the hospital. While the commitment papers are being prepared they are possibly placed in jail. Those patients who have some resemblance of mentality left suffer the agony of this and it only serves to aggravate the prevailing condition. No insane person should be committed to jail, except the comparatively few cases that cannot be handled otherwise, and then for only as short a time as possible. Very frequently we receive patients who have been in jail for thirty days or more, and in many cases they are run down physically and are more dilapidated mentally than they would be otherwise. The most important result of this is that the patient will have to be confined to the hospital much longer than otherwise and after the discharge the patient goes home to find added to the stigma of the insanity the stigma of the residence in jail, which should never have been permitted.

The value the recovered patient plays to his family and community depends directly upon the length of time he is able to remain out of the hospital. We can expect in certain psychosis a recurrence of the attack but the further a part these attacks are the more the patient will be able to be self-supporting and not be a charge of the state and taking up room that should be occupied by cases of acute insanity.

The recovered case of typhoid fever, pneumonia, or fracture, is returned home with much ado and welcome; indeed, everything is done that is possible for their comfort and to make them forget their illness. But this is not the case with a patient who on account of mental illness, has been returned home from a state hospital for the insane.

How fortunate it would be to the patient and to the state if all of our patients could be welcomed home by a loving family, friends and neighbors, and the first trying months outside the institution made as pleasant and comfortable as possible by ignoring their past. How infinitely better it would be if they could be received home as the little Moravian community in Pennsylvania provided for their insane in 1761. They realized the possibility of having to provide for an occasional case of mental trouble, so in paragraph 25 of their articles of agreement, they wrote: "Should any person, by the all Wise Providence of God, be deprived of his senses, he shall, for God's sake, be mercifully treated and patiently borne with and be committed to the care of discrete persons to be attended and nursed by them both as to soul and body, and if so be, he is restored again, no mention shall be made of the former situation in any wise."

In most cases before the patient is discharged from the hospital the attending physician fully explains to his people how he should be cared for. Recovered cases if various types of insanity need different kinds of treatment. The Manic Depressive Insanities need to live absolutely a quiet life. We know that those who live a quiet and sedate life remain mentally well. The case of alcoholism or the drug addict must be shielded and protected. They should not be placed in a position where it would be easy for them to procure more of the deadly poison, neither should they be placed in an environment which would suggest to them the need of more alcohol or dope. In fact, all cases of insanity should be protected from these addictions for they are already weakened physically, as well as mentally, and are not able to withstand the resulting toxins. It could only serve as an indication to an early return to the hospital.

We must mention here the good which psychiatrical social work would do. A personal visit of the social worker can frequently do more towards rehabilitating the discharged patient than anything else, educating the family and community in making them understand that mental disease is not a disgrace and is to be treated just as is treated any other disease. The social worker can do much good also in helping obtain occupation for the recovered patient, and especially those who are regarded with suspicion and fear by the community. Sometimes a change in environment will produce wonderful results.

The family physician has a very definite role to play in the education of the community and the family in regard to the better care of the returned patient. The average citizen of the present day is likely to be informed concerning communicable diseases, but he knows next to nothing about conditions of mental health or the causes of mental diseases, and it is of the utmost importance that the physician act in an advisory capacity to the family and the patient's employer. The time has come when the general practitioners or family physicians must all devote more serious thought to the study of these conditions. They cannot ignore them any longer. I think you will all agree with me when I state that the general practitioner knows less about nervous and mental diseases than any other branch of medicine, and unless the medical profession becomes aroused immediately to an appreciation of the danger arising from their indifference to the problem of mental disorders, and to assisting the average person to make good use of his mind, the chances not only of losing the effects of the discoveries in the prevention and treatment of physical disease, but of actually jeopardizing our entire civilization will be greatly increased.

In regard to pregnancy in patients who have been returned from state institutions, I am absolutely opposed to it under these conditions. I think instructions on the part of the family physician regarding the prevention is absolutely within the rights of the medical profession. If innocent lives are allowed to be brought into the world in this way we are going to see a great cause for the increase of insanity, and I also believe that in certain cases of insanity which we know to be hereditary, as in feeblemindedness or epilepsy, that the only possible solution to this problem is sterilization of both male and female by operative measures before they are returned home. It would possibly be hard to get our legislators to pass laws to this effect, but it has already been done in some state and it will be interesting to watch its effects in these states. As an example California has sterilized over 6,000 defectives. These laws would not only prove a benefit to generations to come, but are practicable from an economical standpoint as well. Dr. A. F. Tredgold in a recent lecture before the Eugenics Educational Society of England, wisely stated that, "It is extraordinary that a people which prides itself on its sound sense should be content to spend millions on the cure, care and maintenance of persons suffering from disease, and take practically no steps to prevent it at its source."

The present growth of our State Hospitals cannot continue without becoming an actual menace to the financial life of the state. We must combine together all the professional, educational and special branches of the state and work in harmony to help the recovered patient readjust himself by overcoming the many obstacles that confront him upon attempting to resume his abode in the family and social life of the community which he is returning to. In this way we can prolong his life of happiness and freedom outside the walls of a State Hospital and prevent him from becoming a permanent charge of the state. In the development of such a program no one person plays as important a part as the family physician and when he becomes vitally interested in the rehabilitation of the recovered psychiatric patient the prospects are very favorable for a continued life of usefulness to the family and community, and a permanent freedom from the danger of again becoming a psychotic case.

THE SIGNIFICANCE OF ABDOMINAL PAIN*

Leroy E. Coolidge, M.D., Greeneville, Tenn.

PAIN in the abdominal wall may have its real origin elsewhere, and pain arising in the region of some abdominal viscus, may by a like perversity manifest itself in another part of the body. It must not be assumed that abdominal pain of necessity means abdominal disease. It depends rather on the stimuli reaching the brain from different nerve fibers. The importance of fuller knowledge of such conditions, particularly with reference to the abdomen, is evident.

We will first consider some of the more typical abdominal conditions and the type of pain which they produce.

In peptic ulcer, pain in the epigastrium, sometimes radiating to the back or side, is the most common symptom, and is the one for which the patient first seeks advice. This pain usually comes on at a definite period following eating of food, and is usually described as aching, cutting, boring, or burning character. This pain varies in intensity according to the character of the food taken, and even the posture of the patient. Occasionally it is of a colicky type, severe enough to demand morphine. The interval after eating at which it occurs is usually constant in the individual case. The pain is eased by bland foods, alkalies, or vomiting. Pressure generally increases discomfort. Early in the disease, the patient may suffer for a few days and then be comfortable for several months, or even years, while later the discomfort is almost constant. Along with the pain there is usually an area of tenderness in the epigastrium to the right of the midline. This type of pain, along with the other symptoms, makes the diagnosis of ulcer comparatively easy.

In biliary colic, the pain is of sudden onset and very severe, in fact, it is often so agonizing that the patient frequently throws himself about seeking to relieve it by change of posture. It is usually in the epigastrium, then passes through the back, rarely as high as the shoulder. Occasionally, it begins in the back. This pain may pass off in a few minutes, or may last several hours. Frequently, it stops as suddenly as it began. There usually is marked prostration with profuse perspiration, weakness and rapid pulse, and occasionally even collapse. This pain is frequently combined with vomiting.

The pain in renal colic is the most constant symptom of stone in the kidney. This pain varies a great deal in type. It may be very severe, or merely a dull ache, paroxysmal, or continuous. In many cases it is localized in the costovertebral angle, but not rarely radiates downward toward the bladder. It may radiate over the entire back, or even upwards to the liver, or opposite kidney. Very frequently these paroxysms of pain depend upon physical exertion, but they may occur during absolute rest. This pain is often very violent. The attack is usually accompanied by nausea and vomiting, profuse perspiration, pallor and prostration. While the pain continues there may be frequent desire to urinate, although the amount of urine is diminished. This type of pain may last only a few minutes, or several days. Whenever the patient complains of pain in the right abdomen which is typical of appendicitis, gall-bladder, or ulcer, it is well always to consider the possibility of inflammation of the urinary tract. Usually, a careful cystoscopic examination will exclude this system.

---

*Read before the East Tennessee Medical Association, Tate Springs, May 10, 1929.

The pain in acute appendicitis is usually severe at the beginning of the attack, of a colicky nature. After the first thirty-six hours, it is a persistent ache. At first, it is often diffused, and referred to the central part of the abdomen. Later, localized in the right iliac region. In many cases, it radiates to the right thigh, and often is referred to the lumbar region and occasionally to the left iliac fossa. Quite frequently, the cessation of pain is an indication of perforation. In these typical cases along with the other symptoms, the diagnosis is very easy, but on the other hand, referred pain from other parts of the body may make the diagnosis very confusing.

During pregnancy there is very frequently severe abdominal pain. Some of this is continuous. Constipation and gas are almost universal during pregnancy, and frequently give rise to pain. Stretching of the round ligaments between the twelfth and thirtieth weeks may cause severe pain. During the early weeks, this pain may even cause suspicion of extra uterine gestation, appendicitis, or other serous lesion, but lacks the physical signs. Undue stretching of the uterus due to twin pregnancies in acute hydramnios gives rise to severe pain. Fibroids of the uterus may give a great deal of disturbance at this time. Pain may be very prominent in concealed, accidental hemorrhage. This usually occurs in multigravidar between the thirty-fourth and thirty-eighth weeks, and may become one of the most serious catastrophes of pregnancy. Rupture of the uterus, due to old Caesarian section scar, may occur. The usual symptoms along with the pain will help in making the diagnosis. The most decided cause of pain outside of the uterus is rupture of extra uterine pregnancies. This pain is very sudden. The patient may be able to say exactly what she was doing when it started, and it is so severe as to double her up. It is followed by faintness. Patient may rest for a time, then have marked abdominal tenderness. Occasionally ovarian tumors cause pain due to pressure, or an ovary rotated on the pedicle. Very frequently we have pyelitis during pregnancy. This causes pain that may be hard to differentiate from acute appendicitis, and other conditions which are not associated with pregnancy. Also, tumors of ovaries and tubes give various degrees of pain and other symptoms. As a rule, this pain is not characteristic.

Very frequently, visceroptosis of the stomach and colon may give various degrees of pain and discomfort. This pain can usually be relieved by a few enemas.

Among other abdominal conditions, there may be a subdiaphragmatic abscess, enlarged spleen, occasionally a spleen that is twisted on the pedicle. This produces very severe pain and prostration. Then again, there is pain which is caused by trauma, but a clear diagnosis may be made by the history and evidence of injury.

It is always well to keep in mind the gastric crises of locomotor ataxia. This usually appears as paroxysms of abdominal pain associated with vomiting. It continues for several hours, or even days, and then ceases as abruptly as it started. We should make it a habit to test the knee jerk in all adults with acute nonfebrile abdominal symptoms, should examine the pupils, inquire about bladder symptoms and about syphilis, and make a Wassermann test.

Occasionally, in advanced arteriosclerosis there is very sudden pain which is somewhat of the nature of angina pectoris. These attacks occur independently of eating, and more commonly develop when the patient reclines. In these attacks, there may be vomiting. Differential diagnosis is very difficult in some of these cases.

The one extra abdominal condition that more frequently than any other produces abdominal pain is pneumonia, particularly when the lower lobes are involved. This is especially true in children. Abdominal pain is rather common complaint of children, such as headache in the adult. Children are very apt to refer any pain to the abdomen. In differentiating these referred pains, when it is in the lower, right quadrant, it is necessary first to make a very careful examination of the abdomen. Usually, when the pain is of the referred type, the tenderness is more superficial. Deep pressure does not cause as much pain. Furthermore, it is necessary to make a thorough examination of the chest in all cases presenting acute abdominal symptoms. We should keep in mind that a leukocyte count of more than 20,000 per cubic millimeter is rarely found in acute appendicitis and is suggestive either of pneumonia or of pus collection in the body. High temperature is more pronounced in chest condition than when the lesion is in the abdomen. Rectal examination is of value in that it may in doubtful cases confirm the diagnosis of appendicitis.

Frequently, apparent gall stone colic is only a masquerade of a diseased condition of the heart, central lobar pneumonia or perhaps pleurisy.

Occasionally, an acute pericarditis in the early stage will stimulate an acute abdominal condition.

Coronary thrombosis very frequently produces intensely severe epigastric pain, shock and vomiting which is typical of "acute abdomen" as anyone can imagine. This may be diagnosed as gall stone colic.

The pain of angina pectoris may be easily confused with gall stone and renal colic. Undoubtedly, the sudden death of distinguished persons which is attributed to "acute indigestion" is of cardiac origin.

It is very necessary to keep in mind that infections of the throat frequently cause abdominal pain. This is especially true in children. Also, we must keep in mind that acute attacks of appendicitis seem to follow throat infections more than any other condition. There are two fairly distinct types of pain in this connection that may, but probably do not, have a common point of immedate origin. The first, most frequent and most characteristic pain usually occurs early in the disease, is intermittent, paroxysmal, or colicky, may be very slight, or very severe, accompanied by little or no tenderness either at the point of pain or elsewhere and is practically always referred to the region of the umbilicus. This pain has many of the earmarks of the referred type of pain of pneumonia, biliary and renal colic and appendicitis. It is hard to explain on any other basis its neuritic quality, its nearly contsant localization at the umbilicus, the relative freedom from tenderness, and the usual appearance at the very beginning of the primary infection. It is equally hard, to route such pain in the present instance.

The second type of pain is less sharply defined, and usually less severe and fairly constant although there may be intermittent paroxysms of considerable severity. It may be localized anywhere in the abdomen, but more often in the region of the umbilicus, or to the right and then in the lower right quadrant. It is usually accompanied by tenderness which is more or less marked than the pain itself.

There are many theories advanced concerning these types of referred abdominal pain, but so far none are very satisfactory. Nevertheless, we must keep in mind that they are very common especially in children. There are a great many statistics at present showing that appendicitis develops much more frequently following throat infection.

One of the most convincing reports is taken from the University of Wisconsin. During a six-year period from 1910-1916 among 16,000 students there were 236 cases of acute appendicitis. During this time, there were eight distinct periods of marked simultaneous increase above the average, or expectant rate of appendicitis and upper respiratory infections. In other words, there were 113 cases in 226 epidemic days as compared with 113 in the 1,600 non-epidemic days, or about eight times as many in the same number of days. Evans stated that 86% of the total number of cases of appendicitis showed a demonstrable primary upper respiratory tract infection. In the group of 113 occurring during the eight epidemic periods, the incidence of throat infection rose to 93%.

Thus, it would appear that non-appendiceal abdominal pains are much more frequent as accompaniment of throat infection in children than are those due to inflammed appendix. Nevertheless, the fact should never at any time stand in the way of our diagnosis if convincing symptoms are present. Possibly the symptoms of preceding throat infection should make us rather incline toward that diagnosis than away from it.

Therefore, I believe that it behooves all of us to use great care in diagnosing acute abdominal pain. Rash conclusions in many cases may lead to wrong diagnosis and frequently disaster for the patient. Most of these errors can be avoided if all the facts combined with a careful general examination are taken into consideration.

CORONARY OCCLUSION

By H. F. Crawford, M.D., Memphis, Tenn.

RECENT search of local hospital records for incidence of coronary disease reveals so little mention of coronary occlusion that a brief search of literature on this subject was made. Prior to the past few years little has been written regarding it, except reference to it when discussing angina pectoris. However, during recent years its importance has been recognized and much has been written on the subject. Herrick's writings began during 1912, and much of our information is the result of his efforts. During 1918 Smith's report on experiments on dogs and electro-cardiagraphic work added much of value, especially in diagnosis. Libman deserves especial mention for his work on the subject. Pardee, White, McNee, Wolff and others have contributed much to our information. The result of these studies and writings is that such a definite clinical picture of acute coronary occlusion has been established that many more such diagnoses should appear upon records than have at former times. Little definite information regarding its incidence has been established. The most interesting found was the report of Paul D. White, after study of three thousand patients with heart trouble seen in hospital, general, and consultation practice in Massachusetts. In this report his incidence of coronary thrombosis varied from three per cent of total cases to six per cent of the private cases.

Males are affected more frequently than females. Former belief that it occurred between ages of fifty and seventy, only, has been disproven by fairly frequent reports. It occurs between thirty and forty, and occasionally, between twenty and thirty years of age. No especial occupational incidence has been noted. Pathology: While any part of the coronary system may be involved, the left coronary is, by far, more frequently the site of the occlusion, and consequently the infarction most often occurs on the anterior portion of the left ventricle. If the occlusion results from an embolus, no pathology within the artery wall may be found and the only cardiac pathology may be that resulting from the infarction. In cases of thrombosis definite sclerosis can practically always be demonstrated. However, this may involve a very small portion of the vessel, and attention has been called to the fact that in many instances little evidence of arteriosclerosis can be found elsewhere. The lumen is usually narrowed, and calcareous plaques may be found practically occluding it. In these cases very little damage in the intima and a resulting thrombus may cause complete occlusion. When occlusion occurs at the orifice, arteriosclerotic changes in the aorta are usually present. The usual changes of anæmic infarction will be found in the area supplied by the blocked artery. Depending upon collateral circulation and the size of the area involved, conditions vary following the infarction. Granulation and fibrosis may follow, resulting in fair to good functioning. Mural thrombosis is usually found. Softening, or fibrosis, may so reduce the thickness of the ventricular wall that aneurism occurs. Necrosis and rupture of the ventricle, and hemopericardium may result. Evidence of passive congestion is usually present in lungs, liver and other organs. This may be little, or much, depending chiefly upon the rapidity of cardiac failure. Thrombi or emboli may be demonstrated in the spleen, kidneys, or other organs.

Previous History: Sudden occlusion and death may occur without history of previous illness or symptoms. More often dyspnoea and evidence of cardiac involvement can be found. In approximately fifty per cent of cases previous anginal attacks have occurred. History of gastric symptoms, syphilis, arteriosclerosis, nephritis, or bacterial infection may, or may not, be obtained, but there is usually evidence of cardiovascular damage. Syphilis does not play the important part previously attributed to it as a causative factor. The use of tobacco and unusual or prolonged mental or physical strain have often been mentioned as causes. Possibly any of these diseases or conditions may have to do with coronary occlusion, but there are no constant findings to associate them definitely with it.

Symptoms: The most characteristic symptom is pain, which usually begins suddenly and is agonizing. It has variously been described as intense, severe, piercing, knife-like, sharp, vise-like, cramping, crushing, choking and as a sensation of fullness, or pressure. It most frequently occurs over the præcordium or beneath the sternum. It may begin in the epigastrium, an upper abdominal quadrant, the xiphisternum, or, less frequently, above sternum in region of jugular fossa. The pain may remain localized, or radiate in any direction. It most frequently radiates down one or both arms, but may be referred to back, scapulæ, neck, lower abdomen, or even testicles. It is not paroxysmal, but continuous, and report has been made that patients who have had angina pectoris state that it is more severe and of different type. It may last for minutes, hours, or days, and is not relieved by change of position, eructation of gas, or nitrites, and not readily by opium. When partial occlusion only occurs the pain may be less severe and of shorter duration. No pain may be recorded when sudden occlusion occurs and death quickly follows. Frequently when pain occurs in the epigastrium it is attributed to "acute indigestion." When the pain is so located and especially following the ingestion of a meal, attention is at once directed to the stomach. Restlessness is usually marked and accompanies the pain. Infrequently pain is not a prominent symptom. Dyspnoea usually accompanies the pain and is often intense, especially in those displaying rapid cardiac failure and resulting congestion of the lungs. Sudden attacks of severe dyspnoea may precede the pain, and at times is more distressing. Again, the respirations may be shallow and little evidence of dyspnoea shown. Orthopnoea occurs frequently and Cheyne-Stokes respiration not infrequently follows after the acute symptoms subside. Nausea and vomiting, and eructation of gas usually accompany the onset. Occasionally the vomitus contains blood. Constipation or diarrhoea may occur. If the latter, difficulty in diagnosis is increased. Weakness, vertigo and fainting are common symptoms, and less frequently, collapse, delirium, or coma occur.

Facies: Is that seen in acute shock. Is anxious, fixed and covered by perspiration. Libman directed attention to the peculiar type of cyanosis which has been described as ashen, ashy gray, or earthy. Much attention has been directed to this color and to the fact that the facies described continues after cessation of pain.

Physical Findings: The skin is clammy. The pulse is usually rapid and feeble, but may be imperceptible, irregular, or, less frequently, slow, and the general appearance is that of shock or acute illness.

Heart: Previous examination may or may not have shown enlargement, but after the onset the picture is that of rapid cardiac failure and dilatation. The sounds are of poor quality, distant or indistinct, rapid, irregular, or, much less frequently, slow. Murmurs are usually absent at this time, but frequently appear as dilatation progresses. Embryocardia, extra systoles, tachycardia, auricular flutter and pulsus alernans, auricular fibrillation and heart block have all been mentioned by various writers as frequent occurrences. Cardiac dullness is increased, but the overlying lung may so confuse its border that x-ray examination may be necessary to define its size. The lungs usually show the result of the failing heart. Crackling rales at one or both bases, or bubbling rales of œdema over entire lungs may be heard. When heard over one base only, differentiation from lobar pneumonia becomes more difficult. Not infrequently the physical signs of emphysema occur which adds further difficulty in examination of the heart and liver. Enlargement of the liver and œdema of extremities may also occur as the result of cardiac failure. Libman has stated that early enlargement of the liver is suggestive that the right coronary artery is occluded. The urine very frequently contains albumen, casts and blood cells, but may be normal. Decrease in quantity, or suppression, of urine is frequently noted. Pericardial friction can be detected in approximately 50 per cent of patients and is a result of the infarction. Careful examination for it should be made from the beginning in all suspected cases, and when found, is of especial significance as a diagnostic aid. It may be present for a short period only; heard at intervals, or noted continuously for an indefinite period. At times it is quite faint and sharply localized and at other times may be distinct and heard over a larger area.

Blood Pressure: Blood pressure findings are fairly characteristic. The systolic pressure progressively and rapidly falls. This, of course, is most noticeable in those previously showing high readings. After onset very low readings are the rule, frequently about 100 mm. The diastolic pressure does not fall correspondingly, and a low pulse pressure is usual. In one patient the systolic pressure fell from 240 very rapidly and remained for a period of several weeks at 110 mm. mercury. The pulse pressure continued low during the time.

Electro-cardiagram: Much has been written regarding changes in electro-cardiagraphic findings. These changes materially assist in estimating the character and amount of myocardial damage. Pardee and others have produced sufficient proof that the most common finding is the change in the T-wave, which is inverted in leads two and three. In fact, it is considered fairly characteristic. However, digitalis may cause readings similar and results will be confusing if this drug has been previously administered.

Fever: Practically always occurs. It is usually not present immediately after the occlusion as it results from the infarction, but begins after a few hours. It may be little or moderately high, but is usually of moderate degree. In one patient the temperature did not exceed 99 degrees. Cases have been reported with fever of 103 degrees. It is reasonable to think that no fever would occur when the occlusion is near the orifice with rapid cardiac failure and death occurring within a few hours.

Leucocytosis: Leucocytosis, as the fever, is attributed to the infarction, and soon follows the occlusion. In all suspected cases leucocyte counts should be made at once and daily thereafter to note changes. Libman and Sachs state that the counts in their cases varied between 9,200 and 25,500 total and the polynuclear count between 81 and 83%; that their lowest polynuclear count was 78, and the highest 91; and that in more than one-half the cases the white cell count ranged between 15,000 and 20,000. Their findings are in accord with those of many others that a moderate leucocytosis, total and polynuclear, is the rule. Study of the leucocyte count is of much significance, not only in diagnosis, but also in prognosis. Leucocytosis quickly follows the occlusion.

Diagnosis: Angina Pectoris, pleurisy, pneumonia, pneunothorax, cholelithiasis or gall bladder disease, ruptured gall bladder, or other viscus, acute hemorrhagic pancreatitis, renal colic, and gastric crisis of tabes, are to be differentiated. Of these angina pectoris and gall bladder disease offer most difficulty. In angina pectoris there is less evidence of shock; usually a history of previous attack; posture fixed; absence of ashy facies; relief from nitrites, and frequently by change of position; shorter duration of pain which is paroxysmal and not continued, less evidence of cardiac shock, quicker return of pulse rate to normal, raised or normal blood pressure, absence of fever, leucocytosis, pericardiac rub, and absense of electro-cardiagraphic findings of occlusion.

In gall bladder disease or colic there is usually a history of "indigestion," typhoid fever, appendicitis, pelvic or other infection, the usual pale facies of shock, less dyspnoea, more definite reference of pain to region of gall bladder with radiation to back or scapular region, more rapid and intense jaundice if obstruction occurs, sudden cessation of pain if stone is passed, less evidence of cardiac shock, no marked change in blood pressure, less evidence of previous abnormality in circulatory system, x-ray evidence of stone or diseased gall bladder, no fever or leucocytosis if stone is passed, but higher fever and leucocyte count if inflammation or empyema occurs. In pneumothorax, pleurisy and pneumonia the age, history, less sudden onset, less shock, nausea, and vomiting; absence of rapid fall of blood pressure; less evidence of rapid cardiac failure; pain that is usually less severe, of "stabbing" character, and more quickly relieved by opium or other measures, absence of pericardial friction and electrocardiagraphic findings, with the x-ray evidence and physical signs accompanying these conditions will usually differentiate them from coronary occlusion. In acute hemorrhagic pancreatitis and rupture of gall bladder, stomach, or other abdominal viscus, the general picture is that of the "acute abdomen." In all of these the previous history of colic, jaundice, peptic ulcer, typhoid fever, pelvic infections, glycocuria, or bile pigment in urine, more persistent nausea and vomiting, more marked leucocytosis, localized pain and definite signs of developing peritonitis will assist in differentiating from coronary occlusion in which there is a frequent history of previous cardiac disease, arteriosclerosis or angina pectoris, the not infrequent evidence of the obliteration of peripheral circulation or infarcts and the previously mentioned physical signs and laboratory findings. The crises of tabes may be differentiated by the history of syphilis, examination of blood and spinal fluid, ataxy, Argyll Robertson pupil, and other signs of luetic involvement of the central nervous system.

Prognosis: It was formerly thought that coronary occlusion was a rapidly fatal condition, but later observations unquestionably show that such is not always true. If the occlusion occurs in a smaller branch or arteriole local myocarditis may subside and little or no functional results apparently remain. If the block is incomplete, the prognosis is more favorable but practically all of complete occlusions quickly result fatally. Numerous reports of recoveries are found in the literature. White reports 62 cases, 18 of which died within one year and 17 were living longer than one year. Occasional reports of cases who have survived for a period of several years following attacks have been made. Sudden death not infrequently occurs in those who seem to be progressing favorably. Continued fever, leucocytosis, marked evidence of cardiac weakness and persistence of inverted T-wave certainly are not favorable findings, as they are indicative of progressive myocardiac changes which may result in necrosis, aneurism, or rupture of the heart.

Treatment: There is no disease in which absolute rest, both mental and physical is more essential and the first indication is to secure from patient and nurse co-operation for that purpose. Under the most favorable conditions rest in bed for a period of four to six weeks should be ordered. If, at the end of that period, conditions remain favorable, plans should be made for a slow but closely observed advancement to limited activity for an indefinite period. In practically all cases permanent restrictions of physical activity and mental strain should be outlined. The use of tobacco, tea, coffee, and other stimulants are prohibited. The ordinary light diet with a minimum of condiments should be ordered. At the time of onset morphine is indicated for the severe pain. Injection of adrenalin into the heart muscle or large doses of caffeine intravenously may also be indicated for the rapidly failing heart. Later digitalis is the drug of choice for the damaged heart muscles and resulting passive congestion. Most writers are agreed that the nitrites are of little or no value. Many advocate the use of potassium iodide for an indefinite period. Mercury and potassium iodide should be substiuted for salvarsan in luetic patients. Frequent observation of heart and general condition should be made for many weeks.

Summary:

(1) Acute coronary occlusion occurs much more frequently than is shown in the records of many hospitals.

(2) It is frequently confused with angina pectoris and the occlusion not recognized.

(3) The vague term "acute indigestion" still appears on death reports when a definite statement of the real cause, which is frequently coronary occlusion, should be made.

(4) A definite diagnosis of coronary occlusion should be made when the following clinical picture is found: Rapid onset of severe continued pain, dyspnoea, or choking, referred to the region of sternum, præcordium, epigastrium or hypogastrium, and especially when radiating to arm or arms, ashy facies, rapidly failing heart, marked fall in blood pressure, leucocytosis, inverted T-wave in lead two and three in electrocardiogram, pericardial friction, arteriosclerosis, or evidence of interference with peripheral circulation, as emboli or thrombitis angiians obliterans.

BIBLIOGRAPHY

Herrick, J. B.—Journal A. M. A., 1912, lix., 2015.

Herrick, J. B.—Journal A. M. A., 1919, lxxii, 387.

Herrick and Nuzum, F. R.—Journal A. M. A., 1918, lxx., 67.

Smith, F. M.—Archives of Internal Medicine, 1918, xxii., 8.

Libman, E.—Transaction of American Association Physicians, 1919, xxiv., 138.

Libman, E.—Transaction of American Association Physicians, 1926, xli., 305.

Libman and Sachs, B.—American Heart Journal. 1927, 321.

Pardee, Harold, E. B.—American Journal Medical Science, 1925, clxix, 270.

White, Paul D.—Journal A. M. A., 1926, 19, 1525.

White, Paul D.—Boston Medical and Surgical Journal, 1926, 195, 13.

White, Paul D.—Boston Medical and Surgical Journal, 1927, 17, 689.

McNee—Q. J. M., xix, 44, October, 1925.

Wolff, Louis and White, Paul D.—Boston Medical and Surgical Journal, 1926, 195, 13.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1930

EDITORIAL

ECHOES FROM THE CENTENNIAL CELEBRATION

The date of the celebration program is too recent for us to have a fair perspective of it. From the echoes that have been heard so far we believe that the results that were intended and hoped for by those who planned it were accomplished.

Doctors have had a glimpse backward. Their views have been broadened. Their pride in the profession has been increased. Their hopes for its future have been brightened and their determination to contribute still more to its future success has been stimulated.

Organized medicine has made substantial contributions to the progress of civilization. It will make still more if sane policies are maintained.

THE PROBLEM OF HYDROPHOBIA

For some years epidemics of hydrophobia have recurred in Tennessee, particularly in Middle Tennessee. In each instance a number of humans have been bitten by rabid animals. The number of Pasteur treatments that have been necessary is enormous. Accurate figures on this point are not available. It seems a bit strange that we would pursue the policy that is pursued in the light of all the facts.

Hydrophobia in man, or animal, is one hundred per cent fatal. Practically all human cases that have developed have been contracted from lower animals and almost all of these lower animals were dogs.

It has been demonstrated in England that if hydrophobia in the dog is controlled human hydrophobia will be controlled. That leads us to these practical conclusions: First, if we had no dogs there would be no hydrophobia. Second, if the dogs that are living were immunized against hydrophobia there would be no hydrophobia in dogs or man.

Pasteur treatment has been successful in preventing the disease in the human, even after exposure, but I would much prefer that a dog take the treatment rather than my child. Another question—have I any right to keep a dog that is a danger to my neighbor's children? There was a time in the history of this state when dogs were essential—they are essential now to the pleasure of many. Those who derive such pleasure certainly would be willing to bear the expense of immunizing the dog.

The policy of the departments of public health, state, county and municipal in giving away Pasteur treatment does not in any way contribute to the solution of the problem of hydrophobia. It takes care of the immediate emergency and that is all. It is in no way constructive. Broad constructive policies will yield results in the eradication of hydrophobia.

Would it not be better to deal with the dog?

OUR HISTORY

Before you read this editorial read the advertisement on the fourth cover of this issue, then when you have read the table of contents of the Centennial History you will send in your order for the volume. After you have ordered the book, and while you are anticipating its arrival, you may be interested in what we have to say about the treat which will be yours when your copy comes.

In the first place you are getting a bargain. Think of it, one hundred years of history for three dollars. Only three cents a year for your history. Why even the Scotch doctors are ordering the book. Doctors are accustomed to pay ten or fifteen dollars for books of this character. However, the trustees were so anxious that every doctor in this State secure a copy of the History that they are selling the book so cheaply that the price is the only joke in the whole deal.

In the second place consider the wisdom of the History Committee in their selection of the editor. Dr. Hamer is the Professor of History at the University of Tennessee. He has written as a historian. He has diligently dug into a great mountain of documents, and now brings us the precious metal which will enrich our lives.

In the third place, just open the book anywhere and you will be astounded. For instance, look on page 464 and see the pictures of five men who joined the Association more than fifty years ago, or look on page 32 and see the picture of the first white child born in Nashville. This man later became a doctor, and has a patient still living in Nashville today. Then turn to the next page and see an x-ray of a fracture set by the man whose birth certificate should have been marked "Nashville No. One." Or on pages 368 and 369 you will see the pictures of the original faculty of the Medical Department of the University of Nashville and of the Medical Department of Vanderbilt University at its foundation as a separate institution. Again you will see that on the list of charter members Bledsoe County had as many members of the Association as Shelby County. Today Bledsoe County has no society, while Shelby has 304 members. The Code of Ethics proves Volstead's ideas were advocated by our professional fathers of a century ago. The second article of the Code reads: "The strictest observance of temperance cannot be too strongly inculcated on the minds of the practitioners of medicine and surgery—a clear and vigorous intellect and a steady hand being absolutely necessary to the successful practice of those branches of medical science."

But why multiply examples? Get your book before they are all sold.

W. M. H.

RESOLUTIONS AND MEMORIAL OF DR. J. MEEK HAMILTON

Dr. J. Meek Hamilton, of Shawnee, was born April 23, 1873, and died February 12, 1930, a kind husband, a loving father, and a benefactor of the sick. It is fitting that we, the Committee of Resolutions, of the Tri-County Medical Society, of which Dr. Hamilton was a member, express our sympathy and appreciation and at the same time give facts relative to his work and achievements.

Dr. Hamilton spent his youthful years on the farm and attended the public schools of Claiborne County; entered the Louisville Hospital College of Medicine in 1893, completing his work there two years later, and began the practice of medicine, and continued in this field of human service for thirty-five years. In 1898 he entered the Tennessee Medical College and graduated there in 1900. In 1907 he again felt the trend of a more thorough knowledge of his work and entered the Hospital College of Central University, Louisville, completing a post-graduate course of fifteen weeks. Again in 1915 he did another post-graduate course in the study of obstetrics at Louisville. Dr. Hamilton is an example of a man who is anxious to "Study to show thy self approved a workman that need not be ashamed," and it was this spirit that made him the qualified physician.

Dr. Hamilton was local surgeon for the Southern and L. & N. Railroads. His patients had the greatest confidence in his ability, admired his devotion to his cases, and loved his congenial personality. He attended the rich and poor with the same attentiveness, and during the years of his declining health sacrificed his own strength that he might relieve those who needed his care.

He is survived by his second wife, Mrs. Parris Hamilton, and daughter, Mrs. John R. Sevier, and three grandchildren. His first wife, Miss Lula Woodson, died years ago. To his first wife there were born two daughters, the oldest dying about the year 1919.

We, the members of the Tri-County Medical Society, do hereby join his relatives, friends and patients, in their profound grief for the loss of this friend and fellow-physician. It not only takes from the family the husband and father, but removes from our organization one of our most faithful and experienced doctors.

Be it resolved, That our Society submit this paper to the family, press and the Tennessee Journal for publication, through the Committee appointed; and, be it further resolved, that a copy be retained for the permanent records of the Society; and that a copy be given the Tennessee State Medical Society.

And further be it resolved, That this be adopted by the Tri-County Medical Society, while in session at Tazewell, County of Claiborne, State of Tennessee, this, the tenth day of March, nineteen hundred and thirty.

(Signed)
M. B. CONRAD,
B. M. DAVIS,
J. H. S. MORISON,
Committee on Resolutions.

NEWS NOTES AND COMMENTS

HEALTH AND ACCIDENTS

Tennessee's growing accident casualty list has impressed itself so forcibly upon Dr. E. L. Bishop, state health commissioner, that he has started a study of the problem.

The department is not so much interested in who was at fault as conditions under which the accident occurred.

And it is not out of line with work of health officials when we consider, as Dr. Bishop points out, accidents in 1928 caused nearly five times as many deaths in Tennessee as did typhoid fever.

Any suggestion the study may develop toward elimination of accidents is a step forward.—*Press-Scimitar*, Memphis.

A recent check-up on the alumni of Vanderbilt University shows that out of 12,896 living graduates, 4,308 are practicing medicine.

Dr. Dexter L. Woods, of Murfreesboro, has moved to Waynesboro, where he has opened his office.

Governor Horton has named the following as members of the Tuberculosis Hospital Commission:

East Tennessee—Dr. Herbert Acuff, Knoxville; John J. Mahoney, Chattanooga, and Mrs. S. H. Dunn, Maryville.

Middle Tennessee—Dr. K. S. Howlette, Franklin; C. A. Craign, Nashville, and Mrs. J. K. Marshall, Murfreesboro.

West Tennessee—Dr. L. M. Graves, Memphis; John Gray, Brownsville, and Mrs. Marc Anthony, Trenton. Dr. E. L. Bishop, Commissioner of Institutions, are ex-officio members.

We regret to learn that illness has compelled Dr. C. B. A. Turner to resign as head of the Obion County Health Unit.

Regional Conference of the American Social Hygiene Association, under the auspices of the Louisiana State Board of Health and the New Orleans Council of Social Agencies will meet at the Hotel Roosevelt, New Orleans, May 26-27. Institutes will be held on Friday and Saturday, May 23-24. Public meeting Sunday. Speakers from most of the Southern and Southwestern states will take part in the program, as well as several representatives from the national society. The meeting should prove of great interest to physicians, public health workers, social service workers and members of parent-teachers organizations.

Beginning this year the American Association for the Study of Goiter will award a cash prize of $300.00 annually for the best original thesis dealing with some phase of the goiter problem. Theses should be submitted by June 1, to Dr. Walter M. Simpson, Chairman of the Essay Committee, Miami Valley Hospital, Dayton, Ohio. The award will be given immediately following the coming meeting of the association which is to be held in Seattle, Washington, July 10-12, 1930.

Dr. and Mrs. S. J. Sullivan, Cleveland, report the birth of a son on March 25th.

Dr. and Mrs. C. T. Speck, Cleveland, report the birth of a daughter on February 20th.

Dr. C. M. Sebastian, of Martin, recently celebrated his eightieth birthday. For the last fifty-six years Dr. Sebastian has practiced in Martin. In point of service he is one of the oldest physicians in West Tennessee, having practiced sixty-two years in all.

Dr. J. Mansfield Bailey is spending a year in Nashville. Since graduation Dr. Bailey has been practicing in Kweilin, China.

The doctors in sections of four states have been investigating the appearance of what the laity call "Jake Paralysis." Nothing has been determined as to etiology. The concensus of opinion seems to be well expressed by Dr. Felix J. Underwood, who says the malady seems to be due to "something chemically wrong in the Jamaica ginger."

The East Tennessee Medical Society will meet at Kingsport May 8th and 9th. A great program has been planned and you will be well repaid by attending.

The West Tennessee Medical Society will meet in Jackson May 15th and 16th. The program committee have arranged a splendid program and the meeting will be well up to the usual high standard.

The Middle Tennessee Medical Society will meet in Shelbyville May 15 and 16.

MEDICAL SOCIETIES

Anderson County—The Anderson County Medical Society met March 3rd at Clinton. B. F. Alexander addressed the society on "Medical Jurisprudence."

Bedford County—We have received a booklet giving this Society's program for the year.

The March meeting was held on the 20th and Dr. T. H. Wood's subject was "Whooping Cough."

Dr. W. J. Sutton opened the discussion.

On April 17th Dr. W. H. Avery will speak on "Toxemia of Pregnancy," and Dr. J. K. Freeman will lead the discussion.

We were told that the cost of printing this twelve page program was met by the six local druggists—a good suggestion to other societies.

Bradley County—The Bradley County Medical Society met March 6th, and passed resolutions opposing the Porter Narcotic Bill. Two cases of "pituitary dysfunction" were presented—one by Dr. W. C. Stanberry, Charleston, and the other by Dr. E. R. Ferguson.

Davidson County—March 11th: "Lower Half Headache," by Dr. F. E. Hasty. Discussion led by Dr. M. M. Cullom.

March 18th—"Surgical Treatment of Trigeminal Neuralgia," by Dr. Thomas D. McKinney. Discussion led by Dr. George F. Seeman.

March 25th—"Hyperchloremia," by Dr. George M. Curtis, Chicago, Illinois.

April 1st—"The Nervous Patient," Dr. J. P. Gilbert. Discussion opened by Dr. W. S. Farmer. Case Report by Dr. Dewey Foster.

Gibson County—The Gibson County Medical Society held a special meeting on February 28th at Trenton to confer with representatives of the Commonwealth Fund. The society endorsed the plans of the Fund to increase the grant for the Health Unit and to supply five post-graduate scholarships to Gibson County physicians.

Hamilton County—The Hamilton County Medical Society met at Chattanooga and elected delegates to the state meeting on March 13th. At the same meeting Dr. G. Victor Williams read the report on Erlanger Hospital and Dr. B. L. Jacobs read a paper on "Diverticulitis." Dr. J. B. Haskins led the discussion.

On March 20th, Dr. T. Lyles Davis had a paper on "Focal Infections from the Standpoint of the Specialist." Dr. S. H. Long opened the discussion.

"Why Terminal Cancer" was Dr. S. S. Marchbank's subject on March 27th. Dr. E. T. Newell opened the discussion.

On April 3rd, Dr. S. H. Long gave a paper of special interest to the E. E. N. & T. men. Dr. C. S. Lassiter led the discussion.

Dr. C. Jeff Miller, president of the American College of Surgeons, addressed the society on April 10th.

Hancock, Claiborne and Union Counties—The Tri-County Medical Society met in Tazewell, Tenn., on March 10th, in Dr. Carr's office. Very interesting papers were read by Dr. Oliver Hill of Knoxville on "Infantile Paralysis;" also by Dr. Richards on "Public Health." A good attendance of doctors were present. The next meeting will be in Maynardville the second Monday in April.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—The Five County Society meeting was held in Hohenwald on March 25th. At this meeting the papers and speakers were as follows:

Dr. J. W. Danley, Lawrenceburg. "Treatment of Goitre with X-ray." Discussion opened by Dr. Wyatt Yeiser, Columbia, Tenn.

Dr. W. O. Floyd, Nashville. "Cancer of the Uterus." Discussion opened by Dr. O. H. Williams, Savannah; Dr. J. H. Tilley, Lawrenceburg.

Dr. W. E. Boyce, Flatwoods. "Injuries of the Elbow Joint." Discussion opened by Dr. O. H. Kirk, Linden; Dr. O. C Doty, Savannah.

Dr. H. C. Boyd, Waynesboro. "Malaria as Treated One Hundred Years Ago." Discussion opened by Dr. Otis W. Whitlow, Savannah; Dr. F. H. Norman, Waynesboro.

Knox County—March 11th: Dr. Eblen Alexander, "The Abuse of Caesarean Section." Discussion led by Drs. Kyle Copenhaver, V. D. Holloway and E. R. Zemp.

March 18th—Dr. Robert Patterson, "A Discussion of Stiff Joints and Their Management." Discussion led by Drs. Victor Hill, S. R. Miller and A. G. Kern.

March 25th—Dr. A. G. Williamson, "Tuberculosis Pleural Effusion." Discussion led by Drs. J. L. Raulston, J. B. Naive and J. F. Brewer.

April 1st—Dr. J. M. J. Vandegriff, "Focal Infection." Discussion led by Drs. E. R. Zemp, R. G. Reaves and R. G. Waterhouse.

Lincoln County—The Lincoln County Medical Society met on March 20th. Dr. J. D. Bryant addressed the Lincoln County Society. This society is now meeting regularly on the third Thursday at 7:30 p. m.

The attendance is good and interest is increasing with each meeting.

Weakley County—The Weakley County doctors attended two medical meetings on March 11th at McKenzie. The first was the regular Tri-County Society at McKenzie. Drs. Harrison and Barr of Nashville were the speakers. Their papers were interesting and instructive. The second meeting was addressed by Mr. Riley of the Federal Health Department. Dr. Ingram, the County Health Officer, entertained the visiting doctors at luncheon with the Dresden Chamber of Commerce.

ABSTRACTS OF CURRENT LITERATURE

INTERNAL MEDICINE

By R. B. Wood, M D.

Medical Building, Knoxville

Bronchiectasis, by Alton Ochsner, M.D. American Journal Medical Science, March 1930.

In contrast to statements of authors of older texts the writer believes bronchiectasis is one of, if not the most frequent chronic pulmonary affection. While etiological factors may be various and many in doubt chronic bronchitis, influenza and nasal sinusitis are the most frequent causative agents. About 90 per cent of a series of individuals suffering from chronic bronchitis and recurring acute attacks will be seen to have evidence of bronchial dilatation.

Textbook descriptions of this disease represent advanced cases in whom results are more difficult to obtain. The earliest diagnostic means is through the use of the x-ray after the introduction of iodized oil.

Where limited to a single lobe extirpation of the lobe is the ideal form of therapy, but usually all or many lobes are involved and medical means must be employed, chief of which has been postural drainage.

The author has found the intratracheal introduction of iodized oil following aspiration in a series of 112 cases has resulted in symptomatic cure of 32 per cent and radiographic evidence of 12 per cent. A further 36 per cent have obtained symptomatic relief and 32 per cent some improvement, but still under treatment.

Note: We would like to recommend this article to be read in the original by the readers of the State Journal. A most exhaustive bibliography is attached. —R. B. W.

The Relation of Cholesterol, Lecithin Phosphorous and Fatty Acids to the Remission of Pernicious Anemia.

The literature frequently mentions the protective influence to corpuscles against hemolytic forces of cholesterol, leading many to believe that this substance and its metabolism is concerned in pernicious anemia. The work of many investigators has demonstrated its abnormally low findings in this disease. Erben in 1902 concluded that in Chlorosis the red corpuscles were not destroyed in this disease because of the low cholesterol content. Others have shown that in some of the so-called hemolytic anemias cholesterol and lecithin are not increased, thus confusing the picture. Much work and further proofs are needed yet to conclude the role of these substances in anemia.

The author using twenty-six cases of pernicious anemia, eight early or doubtful cases and two normal cases, has demonstrated that during the relapse of pernicious anemia the cholesterol and lecithin phosphorous are low, while the fatty acids are within normal limits.

At the onset of remission the cholesterol rises suddenly and this rise is concomitant with the reponse of the reticulocytes and is proportionate as a rule to the intensity of the remission. The rise of cholesterol occurs before the increase in concentration of erythrocytes and hemoglobin. It is independent of transfusions and is called forth by an adequate dose of potent material effective for pernicious anemia.

The results are the same whether the potent material is fed in the form of liver, kidney, liver extracts or certain preparations of meat partially digested by normal digestive juices.

Infection, when delaying or causing an irregular remission is reflected in an irregular response of the lipoids.

Lecithin phosphorous as the rule follows the cholesterol while fatty acids do not show significant variation during remission.

In the two healthy persons the addition of liver or liver extract over a considerable period did not influence the level of cholesterol lecithin phosphorous, fatty acids or the number of erythrocytes or reticulocytes.

PEDIATRICS

By John M. Lee. M.D.

Doctors Building. Nashville

The Comparative Value of Toxoid and Other Agents in the Immunization of the Pre-School Child Against Diphtheria, by A. B. Schwartz and F. R. Janney. Amer. Jour. Dis. Children, March 1930.

Most of the efforts to immunize against diphtheria in this country have been in the employment of toxin-antitoxin The use of this agent has been followed by a definite decrease in the incidence and mortality from the disease, but there are two disadvantages in the use of this preparation.. About 25 per cent of the patients are not immunized by three injections, and there is the danger of serum sensitization from toxin-antitoxin. Figures are quoted showing the percentages of patients showing positive Schick test after toxin-antitoxin had been given at Milwaukee, Gary, Ind., and Chicago. In order to avoid sensitization with horse serum, toxin-antitoxin in sheep serum has been widely employed.

In 1928 Ramon reported results of his work in France with diphtheria anatoxin (toxoid). This preparation, made by detoxifying diphtheria toxin with formaldehyde, is stable and nontoxic, and can not sensitize to subsequent serum injections. This has been used extensively and effectively in Canada. The authors used a supply of toxoid prepared at the Connaught Laboratories, University of Toronto. Three doses were given at intervals of three weeks, the three doses containing 0.5, 0.5, and 1 cc. respectively. Of 93 children so treated, 92 showed negative reaction to the Schick test, the immunization in this group being 98 per cent effective. In this group only one case showed reaction, this being in the form of an urticaria involving the entire arm receiving the injection. This child was found to be allergic to veal broth which is the medium used in the preparation of toxoid. Ramon reports reactions occurring in 1 to 5 per cent of cases, adults showing reactions more often than children .

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Rupture of the Bladder. Campbell, M. F. A Clinical Study of Fifty-Five Cases. (S. G. & O. 1929, xlix, 540).

During a period of fourteen years at Bellevue Hospital, New York, 53 cases of rupture of the bladder were seen. As in this period more than 300,000 surgical cases were admitted, the incidence of rupture of the bladder was 1:5,500. Twenty-five of the cases of rupture of the bladder occurred in 166 cases of fracture of the pelvis.

Rupture of the bladder practically never occurs when the bladder is empty. Predisposing causes are distention, alcoholism, and mental aberrations. Over 90 per cent of the patients whose cases are reviewed were males.

As a rule the diagnosis is made at operation or autopsy. The condition is strongly suggested by a syndrome including shock, signs of internal hemorrhage, dysuria, hematuria, absolute inability to urinate, and tenderness in the region of the bladder. It is suggested also when, on catheterization, a small amount of bloody urine is withdrawn or far more urine is obtained than was anticipated (drainage of the abdomen filled with urine).

The immediate complications are shock, hemorrhage, peritonitis, and fracture of the pelvis, and the late complications extravasation of urine, sepsis, and vesical fistula. Peritonitis developed in 23 of 32 cases of intraperitoneal rupture reviewed by the author.

Of the fifty-five cases reviewed, 20 survived. All of these were operated upon. They left the hospital after from three weeks to six months. Of the 35 patients who died, ten were not operated upon and two lived less than ten minutes after their admission to the hospital.

Operation for rupture of the bladder is performed most safely under nitrous-oxide oxygen anaesthesia. The peritoneum should be inspected, and any urine in the peritoneal cavity should be aspirated or drained. The bladder should be repaired rapidly and drained through a large tube and any peri-vesical hematomata or extravasations should be well drained.

Urology in Women and Gynecology, by W. E. Stevens, M.D., and J. Gordon Henderson, M.D., San Francisco, Cal. J. A. M. A. Oct. 26, 1929.

The authors plead for a closer association of urology and gynecology, not only because of the close connection of the urinary and generative organs anatomically, but also because of pathological and physiological relations. A knowledge of both systems is often necessary for a correct diagnosis.

Due to the proximity of the two systems, inflammatory processes, tumors and displacements of the female generative organs may affect the urinary tract by extension, adhesions, or pressure. "Important factors in the etiology, diagnosis, symptomatology, pathology and treatment of diseases of the urinary tract in women are the anatomic differences in the pelvis organs, the physiologic changes during menstruation, coitus, and pregnancy, and the frequent pathologic conditions associated with both pregnancy and the puerperium." The shortness of the urethra and its close proximity to the vagina has a bearing on the great frequency of non-gonorrheal urethritis and upper urinary tract disease.

Pregnancy has a large part in the etiology of numerous urinary symptoms. The enlarged uterus is apparently responsible for the ureteral dilatation, kinking, and torsion which frequently occurs with consequent upper urinary infection. It is also possibly responsible for bladder disturbances through pressure and traction. Injury of the bladder from labor is common and in three-fourths of all bladders postpartum there is residual. This is a large etiological factor in infection. Injury of sphincter, cystocele, vesicovaginal, urethrovaginal, and ureterovaginal fistulae are not uncommon occurrences following delivery. Tumors of the uterus and ovaries may cause partial or complete obstruction of the urethra.

A series of 8,302 patients at the Women's Clinic at Stanford, 9.9 per cent were referred to urology because of urinary symptoms. Of these, 73 per cent were due to urinary disease, while the other 27 per cent were due to changes in the generative organs. The most common conditions found were urethral stricture, urethritis, and trigonitis, pyelitis, and ureteral stricture.

ANESTHESIA

By Hugh Barr, M.D.

Medical Arts Bldg., Nashville

Superior Laryngeal Nerve Block Anesthesia via the Pyriform Sinus in the Larnyx; Further Experience With This Method in Treatment of Dysphagia, by Henry P. Schugt, M.D., New York. The American Journal of Surgery, November 1929.

With the exception of Hutter and Hofer, no one has used this method on patients with tuberculosis of the larnyx. The author has used this method in ten cases of severe dysphagia and has obtained good results.

The superior laryngeal nerve in its course through the pyriform sinus is found below the pharyngoepiglottic fold and therefore the site of injection is found in this area. In emaciated subjects the nerve is easily seen.

It is not necessary to see the nerve in order to make the injection, which is alcohol not more than .5 c.c. in amount. Pain in the ear and edema in surrounding tissues occur, which gradually subside. One side is injected at a time as bilateral edema may cause dangerous dyspnea. The author has never yet observed necrosis following injection.

OPTHALMOLOGY

By Robert J. Warner, M.D.

Doctors Building, Nashville

Keratoconus: Etiology and Treatment, by Arnold Knapp. Archives of Ophthalmology, December 1929.

Keratoconus is first noticed in adolescence, though it starts some little time before. No pathology has been found, other than some stretching of the corneal tissues. There is no increase in intraocular tension. The subjects are usually anemic, poorly nourished, females, frequently with hypothyroidism. Six patients examined by the author showed normal blood chemistry, mild anemia, mild thyroid deficiency, and low blood pressure. A low normal calcium metabolism was present in two cases only. The calcium percentage was normal. Occasionally, it has been reported as a familial disease, which suggests a hereditary element. The author feels that good results have been obtained by cauterization with the galvanocautery until perforation occurred. Iridectomy and tattooing of the cornea have also been employed after the cauterization when necessary. A cautery tip 2 mm. in diameter was used for the major portion of the cauterization, but the final perforation was made with a fine cautery point. Atropin salve and a binocular bandage were used until the anterior chamber had reformed, a matter of from eight to fourteen days, and a firm monocular bandage was worn for the next five or six weeks, day and night, and then five or six weeks more at night only. Herpes of the cornea, superficial punctate keratitis, and intense hemicrania were the principal complications. Slow reformation of the anterior chamber, panophthalmitis, and secondary glaucoma were also observed.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon, M.D.

Doctors' Building, Nashville

The Frequency of Mastoiditis in Infants, by Ferdinand C. Helwig, M.D., and O. Jason Dixon, M.D., Kansas City, Mo. Archives of Otolaryngology, Volume II, No. 2, February 1930.

Much controversy has arisen in regard to the relationship between mastoiditis and acute nutritional disturbances in infants. Since the publications of Marriott, Alden, Floyd, Lyman and many others, a great deal of attention has been given to infections of the middle ear and mastoid. The startling character of the work of these men has caused a great number of pediatricians and otologists to more or less blindly follow their teachings.

The contention of most investigators has been that the ear infection acted as the primary focus and the enteric disturbance was secondary. There has resulted a marked increase in the number of lanced ear drums and mastoid operations. The desire is to determine by careful examination of end results, i.e., necropsy and histologic studies, the correct relationship between enteritis and ear infection.

There have been two outstanding contributions to this subject from the standpoint of post mortem and histologic study. The first by McMahon who made a careful analysis of the histologic changes in a series of cases in which operations were done. In his first table he cited eight cases in six of which the patients died following operation. Microscopic examination of the bone showed that the predominating features were edema, many red cells and pus cells. He stressed the presence of edema. Bony necrosis was either slight or not present. All these observations obviously show the reaction to be early and acute.

Richards, of Boston, reviewed the records of post mortems on 120 infants, with particular attention to the ears and mastoids. His figures showed little difference as regards ear changes in infants dying from nutritional and non-nutritional disturbances.

The authors report the findings in 173 post mortem examinations taken in sequence from January, 1927, to June 1, 1929. The patients came from the otologic and pediatric services of the Children's Mercy Hospital. In this series 57 were found to have changes in the middle ear, mastoid, or in both (32.8 per cent). In only 17 of these 57 cases was there evidence of enteric infection, while in the remaining 40 almost every common disease of infancy was represented. The incidence of ear and mastoid infection was much higher in the non-enteric than in the enteric group.

Gross and histologic examination of these mastoids and middle ears showed, in the majority, little evidence of bone necrosis. Sometimes when frank suppuration was encountered, early bony necrosis was observed. Oftener the bone was intact and epithelium still present. The predominant picture was that of purulent exudate, rich in pus cells, without death of bone.

Careful study showed the histologic findings fit in rather accurately with the clinical observations. The mastoid symptoms did not, apparently, precede the diarrhea, vomiting complex in the cases studied, since they resemble identically those found in the non-diarrheric child. In two cases of enteric group old ulcerative changes were found in the intestinal mucosa. The ear disturbances were both grossly and histologically shown to be of brief duration. In only three cases of the entire 57 could the mastoid infection have been considered as being the primary cause of death. In this series of 57 cases 41.17 of the infants who gave a history of diarrhea died following operation for mastoiditis.

The bony change was either slight or negligible, in most of them. In every case the history of diarrhea antedated that of the ear infection.

The conclusions are:

1. In the usual fatal illnesses of infants, ear infection is a common terminal event.

2. Enteritis, as shown by necropsy, too frequently antedates the ear infection for one to assume that the latter is primary.

3. The mortality rate of these infants coming to operation was high and distinctly out of proportion to the usual mortality rate.

4. From this study we conclude that although surgical mastoiditis does occur in infants, its importance has been vastly overrated.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

An Important Sign in Acute Appendicitis. International Surgical Digest, Vol. 9, No. 2, February 1930, pg. 91-92. Sumner, F. W., British Medical Journal, I, 106-107.

For some years I have noticed that in all cases of acute appendicitis one sign, not mentioned in the textbooks, is invariably present at the onset. It is the state of the abdominal wall covering the right iliac fossa, and is produced by the earliest reflex of the inflamed appendix. This reflex may, indeed, produce the classical rigidity in severe cases where the onset of the appendix contents are under pressure from a blockage of its lumen or are of great virulence; but in just such cases there is no difficulty in diagnosis. The earliest reflex may, however, result in nothing more than an increase of the normal tone of the muscle covering the right iliac fossa, and is definitely appreciable to careful palpation. This slight tightening of the muscles has to be carefully searched for, and all voluntary contraction of the abdominal muscles must be obviated. The patient lies on his back, limp, his arms by his sides, breathing freely with his mouth wide open, his tongue protruded, and his glottis open, making no noise on respiration. The warmed hand of the surgeon is then placed on the lower abdomen, the metacarpophalangeal joints resting on the pubes and the fingers kept rigid, together, extended, and pointing first to the right clavicle when examining the right side, and to the left clavicle when examining the left side; by a gentle movement of the metacarpophalangeal joints, wrist, and elbow, and without any deep pressure of the phalanges, the muscles tone of the two sides is several times compared, when it will be found that there is a definite increase of tone on the right side as compared with the left.

It is a very delicate palpation, but is worth carefully cultivating. I regard it in my practice as a definite deciding factor in doubtful cases, and it has never let me down. The fact that it is an objective sign and not under the control of the patient makes it of the utmost value.

Another little but important point is always to treat a possibly inflamed appendix very gentle and not to palpate deeply, for even in what appears to be the mildest of cases there may be an ulcer on the point of perforating, or the appendix may be acutely distended with pus. In two cases I have known rough handling result in perforation and death.

Of course, this sign by no means rules out chest troubles or stone in the kidney or ureter, or some other lesion of the bowel, for example, volvulus or intussusception, or a twisted pedicle of an ovarian cyst; but these, and other conditions in which the sign may be present, carry other well defined signs and symptoms. In one such case with mild symptoms of abdominal pain but with definitely increased right iliac muscles tone, the appendix proved to be adherent to the right ovary from old inflammation, thus producing the common menstrual appendix pain. In another patient sent to hospital suffering from acute appendicitis, where many symptoms were present, but this sign was absent, a diagnosis of small ovarian cyst was made, and this was in due course removed.

DERMATOLOGY

By E. E. Brown, M.D.

Doctors Building, Nashville

X-Ray Treatment of the Commoner Microbic Diseases of the Skin.

Higgins, in The American Journal of Physical Therapy, January, 1930, states that regardless of whether the x-ray have any direct stimulating effect upon tissue growth, the fact is that clinically small doses of x-ray have a decidedly stimulating effect in certain diseases of the skin of which acne vulgaris is a striking example. In acne it is now generally agreed that x-ray is the treatment of choice. In sycosis of the beard the x-ray is a help, although it alone will not effect a cure.

Super-soft rays have recently been used and favorable results obtained. They are recommended in the treatment of paronychia and carbuncles. They require, however, a specially made transformer for their generation, and their use in dermatology is at the present time in its infancy.

A Simple Method of Treating Cavernous Naevi

Dowling, in The Lancet, for December 14, 1929, discusses the methods of treating cavernous naevi commonly in use, and states that he has been very successful in destroying these lesions by causing coagulation of their contents. This is done by injecting coagulants in them with a hypodermic needle. He says that he has treated five cases in the West London Hospital in the past year by infecting the commonly used solution of quinine bihydrochloride and urethane; the result has been satisfactory in every case.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

A Simplified Method of Tibeal Lengthening, by Warren White. Joint, Bone and Journal Surgery, January 1930.

This method greatly simplifies the technique of leg lengthening as compared with that of Abbott and others.

Briefly, the technique is as follows:

The point for Z-osteotomy is selected. A six-inch incision is made just lateral to the crest of the tibea and the osteotomy line is marked out on the bone. About one-half inch proximal to upper horizontal cut, a hole is drilled horizontally through the tibea, another one-half inch distal to lower horizontal limb, then two more: one proximal and one distal. These are bored large enough to admit seven-inch Steinman's pins passed through separate small skin incisions. Then the fibula is osteotomized obliquely and completely freed. The Z-osteotomy is done on the tibeas and the wound is closed. Perforated rubber discs are fitted over the pins and corks are used to protect the ends. A cast is then applied from the toes to the groins. After it is dry a circular cut is made around center of the osteotomy in the cast. Four drill holes on each side are bored to admit the ends of turn buckles which are simply unfolded and bent at right angles to enable them to hook into the casts. And one turn daily of all the turn buckles will lengthen the bone two inches in about thirty days.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII MAY, 1930 No. 5

MEDICAL PROGRESS.*

L. T. STEM, M.D., Chattanooga, President, Tennessee State Medical Association

CIVILIZATION is but a filmy fringe on the history of man. Go back as far as his records carry us and the story written on stone is of yesterday in comparison with the vast epochs of time which modern studies demand for his life on earth. The ancient history only now beginning to be studied dates from the Miocene period. The modern history, as we know it, embraces that brief space of time that has elapsed since the earliest Egyptian and Babylonian records were made. The first record of medical work being done was four thousand years before Christ.

Medicine rose out of the primary sympathy of man with man; out of the desire to help those in sorrow, need and sickness; the instinct of self preservation, the longing to relieve a loved one, and above all, the maternal passion for such as it is, gradually softened the hard race of man.

The late Dr. Payne once said, "The basis of medicine is sympathy and the desire to help others, and whatever is done with this end must be called medicine." The first lesson came to primitive man by injuries, accidents, bites of beasts and serpents, perhaps for long ages not appreciated by his child-like mind, but little by little such experience crystallized into useful knowledge. The experiments of nature made clear to him the relation of cause and effect. But is it not likely that he picked up his earliest knowledge from certain practices in animals as the natural phlebotomy of the hippopotamus, or the use of emetics from the dog, or the use of enema from the ibis.

Selsus account of rational medicine was that some of the sick on account of their ignorance partook of food on the first day, some on account of loathing, abstained; those abstaining seemed to do better than those that did not. Occurring daily such things impressed careful man, who noted what best helped the sick, then begin to prescribe it. In this way medicine had its rise from the experience of the recovery of some and the death of others.

Observation came and with it an ever-widening experience. In the earliest history, religion and medicine were the same and it was thought that bad spirits caused disease and good spirits healed or cured disease. The first laws recorded pertaining to medicine are the famous Hammurabi code 2000 B. C., some of which are the following: "If a doctor has treated a gentleman for a severe wound with a lancet of bronze and has caused the gentleman to die one shall cut off his hands, or if he has cured the shattered limb, or has cured a diseased bowel, the patient shall give five shekels of silver to the doctor." Then came a time when a patient was placed in a public square and people passing were compelled to stop and speak to him and inquire of the disease and if they had had a similar disease, made to tell what cured them.

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

Then came the period of Aesculapius. No God made with hands, to use the scriptural phrase, had a more successful "run" than Aesculapius for more than a thousand years, the consoler and healer of the sons of men. Shorn of his divine attributes he remains our patron saint, our emblematic god of healing. His worship was introduced into Rome at the time of the great plague, at the beginning of the third century, and the cult flourished mostly in places which, through climatic or hygienic advantages, were natural health resorts. Later, magnificent temples, pleasure grounds for festivals, gymnasia, in which bodily ailments were treated by physical exercise, baths and innunction, were built.

Following was the golden age in which medicine and religion were separated, and intelligent study was begun and health was defined as "the maintenance of equilibrium." During this period the "father of medicine," Hippocrates, was born on the island of Cos, off the coast of Asia Minor. He died 375 B. C. He was the first man to predict without fear and to separate disease from God, attributing it to natural causes. He developed physical examinations, inspected his patients, palpated livers and spleens, described succussion splash, kept records of his cases and tabulated results. He observed that fat people died earlier than the thin. He advised consultation in doubtful cases and the most scrupulous cleanliness in person. And his greatest monument being his Hippocratic oath which is the basis of our code of ethics today.

The first medical school was founded at Alexandria 300 B. C. and counting of pulse was begun. After this progress was slow, but in 1537 Vessaleus dissected human bodies and the study of human anatomy was begun. In 1628 Harvey discovered the circulation of the blood, and about this time Kircher began the use of the microscope in the study of the blood, but Leowenhock first described red blood corpuscles, and he demonstrated the cappilary anastamosis between arteries and veins and thus completed Harvey's demonstrations.

After this the progress of medicine was more rapid and in 1796 Edward Jenner, a pupil of John Hunter, and to whom he gave the famous advice, "Don't think, try," developed vaccination against small-pox, and thus artificial immunization was first performed. Laennec in 1806 laid the foundation of modern clinical medicine and his discovery of the stethoscope revolutionized physical diagnosis.

In 1809, a backwood Kentucky surgeon, Ephriam McDowell, did his epoch-making operation, the removal of an ovarian tumor. In 1811, it was shown by Blackwell and also by Wells, the celebrated Southern physician, Charleston, South Carolina, that the urine contained albumen in many cases of dropsy, but in 1836 Richard Bright began a careful investigation of the bodies of patients who had presented these symptoms and he discovered the association of various forms of diseases of the kidney as the cause of anasarca. During this progressive period Crawford W. Long of Georgia, gave ether as an anæsthetic in March 1842, but did not report it, but October 16, 1846, Morton gave it to extract a tooth at Massachusetts General Hospital, and published the result. In 1843, Oliver Wendell Holmes pointed out the contagiousness of child-bed fever and suggested the use of chloride of lime in washing the hands and the change of clothing as a preventative measure for those physicians doing post-mortem examinations or treating cases of puerpal fever, but Semmelweis, an assistant in obstetrics in the old Krankenhaus in Vienna in the first ward, and having such a high mortality in puerpal cases that women begged in tears not to be taken into it, he noticed that the first ward differed from the second (which had a lower mortality rate) in that students came into it directly from the dissecting room for instruction, often making vaginal examination with unclean hands, while in the second ward devoted to the instruction of mid-wives, much greater attention was paid to personal cleanliness. With this idea in mind he began a careful study of the autopsies of fatal cases of puerperal fever and in 1847, one of his former instructors died of a dissection wound. He attended the autopsy and noticed that the pathological appearances were the same as in the fatal cases of the puerpera of his ward, and he immediately instituted such precaution in the handling of labor cases that his mortality was reduced from 9.92 to 3.8% the first year and 1.27% the next. He used chloride of lime solution in washing the hands as had previously been suggested by Holmes five years before and thus he became the true pioneer of asepsis in obstetrics, because he recognized child-bed fever as a blood poisoning or septicemia. He met with persecution and abuse from many leading obstetricians, even in Vienna, who, by visiting his wards, should have been convinced of his discovery, and in disgust he left Vienna for Budapest, where in 1855, he became professor of obstetrics. He published his paper on "The Cause, Concept and Prophylaxis of Puerperal Fever," as well as a scathing "Open Letters to Sundry Professors of Obstetrics." But his sensitive nature was not equal to the strain of violent controversy, and brooding over his wrongs brought on insanity and death. He is one of medicine's martyrs and the monument in his memory erected in Budapest is an honor to the Hungarian people as well as a light-house of safety to every woman about to become a mother.

In 1865, Lord Lister, after reading Pasteur's work on the prevention of growth of micro-organism by heat sterilization of wounds, began trying various chemical antiseptics, and finally used carbolic acid in operative wounds and introduced asepsis to the world. In 1876, Robert Koch published a paper on the constant presence of the germs of anthrax in the blood of animals dying of the disease, but the epoch-making advance of Koch was the growing of these organisms in pure culture outside of the body and producing it artificially by inoculating animals with cultures.

Koch is our Gallileo, who by means of a new technique, pure cultures and isolated staining, introduced us to a new world. In 1878, following his study on the "Etiology of Wound Infection," in which he was able to demonstrate conclusively the association of micro-organisms with disease. So a country doctor developed the foundation of our modern bacteriology.

Following this was the discovery by the great Pasteur of the possibilities of so attenuating or weakening the poison of germ that an animal inoculated had a slight attack, recovered, and was then protected against the disease. And thus his discovery of the foundation of a preventative inoculation that we are using against many diseases was given us. It was through an accident that virulent cultures of chicken cholera virus became sterile or inactive and when injected, were found to be inactive. The fowls receiving this virus later being injected with virulent cultures were found to be immune.

These discoveries led to rational study of disease and with new technique and experimental methods. Just seventy-seven years has passed since Pasteur sent his paper on "Lactic Acid Fermentation" to the Lille Scientific Society, in which more has been done to determine the true nature of disease than all the work previously done.

It is useless for me to mention the various discoveries in this time as they are already too well known to you, but I feel that here the changes in the ideas of the prevention, cause and treatment of typhoid fever seventy years ago and today might be a striking example of the evolution of medicine in general. Seventy years ago there was no known prevention, it was thought to be due to an inherent pre-disposition in certain individuals and the exciting causes the various miasmata, decomposing animal excreta, exposure to sun, weather, epidemic influence, etc. The treatment was numerous drugs, bleeding, leeches, blisters, and food to a very limited amount. During this time patients were mere skeletons on the beginning of convalescence. Later baths were repeated to keep temperature under control.

Murchison was the first to suggest that infection was contained in feces of typhoid patient as a means of disseminating the disease and recommended disinfecting the stools as a means of controlling the disease. In 1880, Eberth discovered the bacillus typhosus and found it in blood, feces and urine, and is carried as Osler once said, by "fingers, food and flies," and Windal in 1896 gave us his agglutination test.

While today drugs play a very unimportant role in the treatment, except hexamethylamin in later part of the disease, as a means of combating gall-bladder disease and to clear the urine, of the baccillus, while baths to a lesser degree than formerly, are used now, and in recent years there has been a rather definite tendency to consider fever a purposeful reaction of the organism to infection, and the work of Rolly and Meltger has shown that temperature above normal favors the formation of immune bodies, and there is a growing feeling that attempts to reduce temperature under 104 may not be good therapy, although this upper limit is purely arbitrary.

The diet in later years was almost entirely milk, but in many cases milk was a large factor in the production of tympanitis, and many patients soon developed a marked aversion to milk and the records in Cook County Hospital showed the average patient only took one quart of milk with a caloric value of 650. While today we know that the average patient should take 3000 calories daily. We select diet that will not reach the intestines in hard form, and it should be a balanced diet of high caloric value. Carbohydrate should furnish more than half the energy. Protein one gram per kilo of body weight and fat about one-third the total calories. The prevention today is proper sanitation, disinfecting excreta, patient's clothing, other articles used by the patient, screening against flies, and thorough scrubbing of hands of nurse and physician with antiseptic on hands. The proper control of food, water, and milk supply, with protective vaccination, which was first used in England by Wright, in 1896, but the results were not striking due to insufficient doses, but due to increased dosage during 1918, when millions of men were in the American Army only 297 cases developed in the entire army as against 4,422 cases in one division of 10,759 men during the Spanish-American War.

Who has helped to revolutionize medicine more and to take advantage of every proven method of diagnosis, treatment and prevention of disease than the general practitioner, or as my friend Revington so aptly terms him, the "General Specialist," for is he not informed on almost the entire field of medicine? Is not the family doctor familiar with his patient even before the inception of disease? It is he who sees the onset symptoms and observes the progress of disease through its course or throughout life, if it should last so long.

Sir James McKenzie once said, "He is the only individual in the community who has a broad outlook on medicine, he sees conditions which predispose to disease, he sees its inception, the course it pursues, when amenable to treatment or the time or when it calls for surgical interference, he sees the after effects of the operation when the surgeon may call it a success." May the time never come when he will cease to exist. It was he who ushered many of us into this world, attended many of our needs during life and assisted us when we decided to follow in his footsteps, encouraging us in our efforts when we seemed to fail, coming to our assistance when in need, thanking God for every move that lifted us to a higher level in our profession. May the future years bring his reward and future generations call him Blessed.

REFERENCES

1. Sir William Osler, "The Evolution of Modern Medicine," page 2.

2. Garrison History of Medicine, 1917.

3. T. W. Moore, M.D., Southern Medical Journal, January 1930, page 1.

4. George B. Wood, Wood's Practice, 1847, pages 314 to 337.

5. Sir James McKenzie, Oxford Medicine, Volume IV.

6. Joseph Miller, Oxford Medicine, Volume IV.

THE EVOLUTION OF ABDOMINAL SURGERY DURING THE PAST CENTURY.*

By JOHN B. DEAVER, M.D.

BEFORE proceeding with the agreeable task assigned to me, let me express my profound appreciation of the honor implied in your request to trace the development of abdominal surgery, the real inauguration of which almost coincides with the birth of your estimable organization. This occasion, therefore, marks a double and happy commemoration. It is scarcely possible within the limits of my time and your patience to do justice to so large a subject. All that I can hope to do is to present in broad general outlines the Then and Now of abdominal surgery and the steps that have served to make the Then of a hundred or even fifty years ago seem as remote as the very beginnings of medical history itself.

Surgery may be conveniently divided into three periods: an early period which extends through the ages down to the nineteenth century, a middle period beginning with 1800 and extending into the third, the present era, inaugurated by the introduction of anesthesia and more particularly by the rise of the germ theory of disease and its corollaries, antisepsis and asepsis. When realizing the meagre physical equipment, the comparatively indefinite knowledge of anatomy, anatomical relations, physiological function and pathology that obtained during the early days of surgical endeavor, one must marvel alike at the boldness of the operator, the courage of the patient and whatever measure of success that was attained.

Throughout the ages we can trace a red thread indicating the paths along which traveled eager desire to know the why and wherefore of disease and the search for the paths that lead to its cure. A survey of the chart would seem to show that surgery antedates medicine, the latter being more intimately bound up with religion and with priestly functions. As times goes on we see the lines of demarcation between the two become more and more widely separated, until during the middle of the eighteenth century they began to converge and have been coming closer until they have finally entered upon what may be called a companionate marriage. The change began with the appearance of that gigantic figure in medical annals, John Hunter, the man who laid the foundations of anatomy, physiology and pathology upon which the present temple of the medical sciences rests. It is true that before Hunter there were sporadic reports of abdominal surgery, mainly herniotomy, lithotomy, but the surgeons of those days were clinical surgeons whose methods had scarcely advanced since the sixteenth century, the surgical history of which was dominated by the picturesque figure of Ambrose Pare, the father of surgery. Pare and his contemporaries knew little if anything of pathology, so that their work, though brilliant and fundamental was marked by empiricism. Indeed, little if any progress in systematic surgery was made from the days of Hippocrates to the middle period which came with the nineteenth century. This applies with particular force to abdominal surgery which owes its inception to the boldness of Ephraim McDowell of Danville. Kentucky, who in 1809 successfully carried out the first definitely planned abdominal section for an ovariotomy. We know that previous to this other surgeons had toyed with the idea of removing cystic ovaries by abdominal section but they lacked the courage to attempt it. McDowell himself was inspired by the teachings of John Bell of Edinburgh under whom he studied in 1793 and who was paying special attention to diseases of the ovaries. With the picture of the desperate state of women afflicted with pelvic disease ever in mind, McDowell, when the occasion arose, did not hesitate to suggest the operation to his equally courageous client, Jane Crawford. Although the success of this and two subsequent operations established abdominal section as a legitimate procedure, it took many decades to drown the contumely of public opinion, both professional and lay, heaped upon those who dared enter these areas, which were considered too sacred for the surgeon. This state of public opinion may have had much to do with the fact that McDowell did not publish an account of his operations until 1817. Emboldened by his fearlessness and his success—thirteen operations with recoveries—other surgeons soon resorted to this method of relieving their female patients of intolerable suffering. Second on the list of ovariotomists stands Nathan Smith, of Vermont, who performed the operation in 1821 without knowing of McDowell's work. After this, due to the impetus given to the procedure principally by the two Atlees of Pennsylvania, ovariotomy was gradually conceded to be a legitimate procedure and became firmly established as such. But for at least half a century it remained the province mainly of American and British surgeons. The British pioneers were Lezars of Edinburgh, Charles Clay and notably Spencer Wells of London. Wells made the study and diagnosis of ovarian tumors his life work and by his improved operative technique established ovariotomy as one of the most beneficial surgical procedures. In France ovariotomy was adopted principally through the work of Auguste Nelaton and Jules Pean, but in Germany it received no consideration until after the middle of the century.

---

*Read before the Tennessee State Medical Association, Nashville, Tennessee, April 9, 1930.

This period which marks the actual beginnings of abdominal surgery, ushered in as it was by ovariotomy and developing along lines for the relief of diseases of the female pelvis, is often termed the gynecological period. Other operations of the time include vaginal hysterectomy and myomectomy for fibroids, Caeserian section, operations on the female bladder, etc. But the palm of honor belongs to Marion Sims for his work on vesico-vaginal fistula, the stumbling block of the gynecologist both then and now. Sims was endowed with the happy combination of mental acumen, manual deftness and inventive genius, which almost inevitably make for success. Sometimes brilliant achievements are apt to be regarded as containing some element of luck, but as has been well said, "Luck is the accident that happens to the competent." It may have been luck for Dr. Sims to be called to a patient who having been thrown from a carriage was found to have retroversion of the uterus as a result of the accident. During the course of this examination, finding that in the knee-chest position air will rush in and balloon the vagina as soon as the vulvar orifice is opened, he hit upon the idea of the *curved speculum* for opening the orifice and from this there eventually developed his operation for vesico-vaginal fistula. If this is the luck that comes with competence, that which comes with persistence is well illustrated by the thought of silver sutures in surgery. Sims had to experience many difficulties before he cured his first case of vesico-vaginal fistula, in 1849. During the four or five years of disappointments with the silk sutures used in closing the fistulæ, on one occasion while walking on the street he happened to notice a piece of spiral brass wire and at once hit upon the idea of using silver wire for closing the denuded edges of the fistula. In these days of perfected surgical armamentarium it is difficult to realize the vast import of these two apparently simple contrivances, the speculum and silver sutures. The speculum marks not only the beginnings of the direct vision form of examination, but has opened the way to modern pelvic surgery. We shall hear of Sims again with the rise of general abdominal surgery as distinguished from the gynecological surgery. But we cannot dismiss him now without noting that his success was all the more remarkable in that, although the discovery of chloroform and ether anesthesia had already been announced, his operations were done without anesthesia and at a time when antisepsis was still a secret.

From France at this time we hear of Koeberle, who in 1864 was the first successfully to open the abdomen for the removal of a fibroid, and of Pean with a successful abdominal hysterectomy and also a splenectomy to his credit in 1867. Prior to this, however, Gustav Simon, a German surgeon of marked originality, in 1857, reported a successful splenectomy on a human subject; later on also the same operator was the first to attempt nephrectomy, although his first essay was successful, his second patient died of sepsis from a digital exploration on the twenty-first day after operation. This together with the fatal result of the same operation reported by Paul V. Bruns in 1878, put an end to nephrectomy until antisepsis came into its own.

It is only natural that abdominal section met with small success at this period and that its practice should arouse intense opposition in professional circles. Removal of the spleen, like nephrectomy, except as a last resort in an otherwise fatal wound, came in for its share of controversy after a second unsuccessful splenectomy was reported by Kuchler in 1855. It is not surprising, therefore, that ten years were to elapse before we again hear of the operation. This time the report comes from England, the work of Spencer Wells. In spite of the fact that Wells' patient died one week after the operation, attempts at splenectomy from now on became more numerous as the scope of operative surgery in general was widened under the beneficent reign of the trinity, anesthesia, antisepsis and bacteriology, which marks the actual rise of systematic surgery of the abdomen. Hitherto the surgeon's courage made up for his lack of scientific knowledge. Henceforth surgery which had been taught mostly as an art, was to be taught also as a science, and hand in hand the two were to proceed in a triumphal march which is still going on.

Every conceivable metaphor has been evoked in the attempt properly to evaluate the immense boon to humanity represented by the introduction of anesthesia. I can think of none that more succinctly expresses this thought than Weir Mitchell's poem on the Death of Pain, wherein he terms it:

"The highest mercy brought by man to
man, which
Struck from the rolls of pangs one awful
sum;
Made pain a dream and suffering gently
dumb."

It would be no misnomer to designate the era thus inaugurated, the Romance of Surgery. For such no doubt it would prove to our honored fathers, could they witness the scenes in our modern operating theatre and the dramatic events that made possible the comparative safety of modern surgery. The romance begins with the discovery of anesthesia, in the city of Boston, when

"Hope 'mid deepining stillness watched one
eager brain
With God-like will decree the Death of
Pain,"

as on October 16, 1846, in the operating theatre of the Massachusetts General Hospital was staged the first public demonstration of the use of ether in operative surgery. The central figures of this dramatic event were W. T. G. Morton, a dentist, the anesthetist of the occasion, John C. Warren, the surgeon, and the courageous patient, a young man whose name has not come down to us, willing to submit to the test of painless surgery for the removal of a tumor of the neck just below the mandible. After the operation the patient declared although aware of the manipulation, he had felt no pain and that "the stroke of the knife felt like a blunt instrument being passed roughly around his neck."

Contending claims of priority have established the fact that to Crawford Long, of Jefferson, Georgia, belongs the credit of having been the first to use ether anesthesia in surgery. On March 30, 1842, four years before Morton's public demonstration, Long administered ether to one James M. Venable and removed a small cystic tumor from the back of his neck. The patient on awaking declared he had not "felt as much as a scratch" and was amazed to see the tumor in the hands of the surgeon. It is entirely credible that these first events should not have been known to Morton, distance and the as yet unformed habit of rushing into print, preventing the knowledge. It is likewise entirely conceivable that two surgeons should simultaneously have hit upon the same idea. The horrors of the operating room were such that the desire to reduce pain was ever uppermost in the minds of all surgeons of those days. Indeed, crude attempts at anesthesia had always been made. But it is the final birth of this boon that has the flavor of fiction. It appears that in those happy pre-Volstead days a fashionable form of amusement was to become gloriously intoxicated by non-alcoholic means. One of the favorite methods was inhaling laughing gas provided by the itinerant lecturer on chemistry after the close of his lecture. The story goes that on one occasion a group of students begged Dr. Long to give such a nitrous oxide party. In the absence of material for preparing the gas, Long used sulphuric ether. The party was a great success and thereafter ether frolics became the rage. On the morning after, Long and his friends found bruises on their bodies without any knowledge of how they had been inflicted. It then occurred to Long that this would be a method of producing surgical anesthesia. Thus from the idle frolics of youth the dream of the surgeon became a reality and assumed practical form and shape.

With this boon at his disposal, the surgeon naturally began to increase his scope. But another spectre stayed his hand. The cries of the patients were hushed, but the surgeon was still to be dismayed by the grim phantom of hospital gangrene which with the increased scope of surgery loomed larger than ever before. To rout this ogre and lay him forever low now became the ambition of the surgeon. Strange to say, deliverance was to come not from a surgeon or from a doctor, but from a chemist who had never handled a scalpel and who had to nerve himself to witness a surgical operation. It was Pasteur "who led them into the kingdom they longed for but could not have found for themselves." But they did not all of them willingly enter the blessed kingdom. Pasteur was compelled to fight with religious zeal and equally religious intolerance of the profession in order to impress upon them the true offenders in the mysteries of inflammation and wound infection. Time and again he interrupted the discourses of learned doctors, rushing to the blackboard and drawing the shapes of the organisms guilty of causing suppuration and infection.

The scene now changes to a land across the English Channel, where Pasteur's theories were quietly being recognized in the seclusion of a laboratory of physiology, their soundness presently to be demonstrated in the operating room and the hospital ward. Joseph Lister, the central figure of this part of the drama, before assuming the chair of surgery in the University of Glasgow and surgeon to the Glasgow Royal Infirmary, in 1861, had devoted considerable time to experimental work on the early stages of inflammation, blood coagulation, etc. These studies led him to correlate sepsis with putrefaction and to realize that if putrefaction could be prevented sepsis could be avoided. He attempted this control by cleanliness, but of course in vain for hygienic cleanliness was still unborn, and the evil phantom of the hospital continued to walk the wards. Finally, during the course of a conversation with Thomas Andrews, the professor of chemistry in the Glasgow University, Lister's attention was called to a certain publication hailing from France, on the ever-controversial question of spontaneous generation, the causes of fermentation, etc. Lister at once procured these papers and lo and behold! one riddle of the ages was about to be solved. The enemy was to be found not in the gases of the air, as had hitherto been supposed, but in minute living organisms floating in the air, or present in the dust that settled on surrounding objects. And now one of Pasteur's favorite aphorisms, "Chance favors the prepared mind," was to find dramatic application and far-reaching results. Lister's being a philosophical and a logical mind and the experimental era being at hand, he soon translated Pasteur's theories into facts. Prevent, if possible, the germs from entering the wound, but once they have entered kill them before they have a chance to do further harm, or as has been proven by later developments, inhibit their growth without the necessity of killing them! These are the fundamentals of antisepsis and asepsis as we know them today. With these three generals, anesthesia, micro-organisms as the cause of suppuration and antisepsis in command, the campaign was set for the battle royal against infection. The subject of contention had changed from a dispute over forms of practice to one involving some of the fundamental principles of practice. Many a furious battle was fought before the campaign culminated in the most signal victory in the warfare of science that the world has known. The profession was divided into Listerians and anti-Listerians. The surgeons among the latter were as loathe to discard the methods, which had more or less successfully served them, as they were to give up the blood-stained, germ-soaked linen duster which they had used as an operating gown, not with any idea of protecting the patient, but for protecting their own clothing. The Listerians finally won. The barriers which thus far had stayed the surgeon's hand were thrown down and one avenue after another was now to be opened to the surgeon's aseptic scalpel.

Thus surgery, indeed the medical world, was relieved of the intolerable burden of those mysterious and unaccountable influences on wound healing that had thus far hampered its work, a release that imparted a degree of freedom in practice such as the art and science of medicine throughout its history of more than 2,000 years had never in the least approached. The way was opened for the operative surgeon to enter fields his forefathers dared not tread, nor probably in their most fantastic dreams never hoped to enter.

In retrospect these days give the impression of chaos dominated by the zealous efforts of the inventive surgeon and an exhibition of almost foolishly aggressive surgery by the bold surgeon who sometimes made a veritable theatrical show of the operating room. The new technique naturally was still in its formative stage and required modification all along the line before arriving at the detailed perfection which we observe today. The operating room of the pre-Listerian and early Listerian period differs so essentially from our own that it is difficult to realize that it is only somewhat more than a half century ago that what have become indispensable aseptic precautions were still in the making. All the more must we marvel that any operation was successful and all the more must we look with proper humility upon our own failures in spite of all our refinements of clinical and operative technique. A brilliant galaxy of surgeons graced this period. Gross, the elder and the younger, Marion Sims, Nicholas Senn, Fenger, Lawson Tait, Mickulicz, Bilroth, my own revered preceptor, Agnew, and numerous others who sowed the seeds of the harevst the world is today reaping.

Out of the apparent chaos of the 70's and 80's there gradually evolved the systematic scientific procedures that dominate surgery today, based on ever-increasing knowledge of the human system provided by that large family of scientific siblings that have sprung from the union of the principles established by Pasteur and Lister. A review of the development of these sister sciences is not entirely within the compass of this paper and would take me too far afield. I must stick to my text, although it is a self-evident fact that without the contributions of these off-springs, surgery could not have advanced to whatever state of perfection it now enjoys.

Abdominal surgery, which only now began its true career, owes a particular debt to the intrepid investigators of these days who were daily demonstrating the fallacy of many tenacious and time-honored theories. One of the first of these delusions to be dispelled, of particular importance to abdominal surgery, was the idea of the fatality of peritoneal wounds. With the proof that this membrane as well as other serous membranes are very tolerant of injuries inflicted by the surgeon, provided of course that septic poisoning could be prevented, this delusion was dispelled and abdominal surgery came into its own. There now came a time of almost furious activity culminating in an impressive array of surgical triumphs. The year 1869 marks the first successful extirpation of the kidney by Simon. In 1872 Bilroth resected the esophagus. In 1876 Porro introduced Caeserian section with excision of the adnexa. In 1881 Bilroth successfully resected the pylorus for cancer, to be followed shortly after by Woelfler's original operation of gastroenterostomy and other anastomotic procedures, for example, ileo-colostomy by Senn and by Bilroth. This decade also marks the entrance of the gall bladder and the biliary tract into the surgeon's field. Although a cholecystostomy was performed in 1868 by Bobbs of Indiana, and in 1878 by Marion Sims, the credit of the successful operation of chelecystectomy belongs to Carl Langenbuch, 1882, followed in 1885 by choledochostomy by Kummel, both of Germany.

We now come to a banner year in surgical annals. The year 1886 in which Reginald Heber Fitz exposed the appendix as the culprit in what was then regarded as typhlitis or perityphlitis. The almost invariable mortality of "abscess in the right iliac fossa" as the disease was called, was the despair of the profession until the appearance of Fitz's brilliant and epoch-making publication of the pathogenesis of appendicitis, the name coined by him for this disorder with its despairing prognosis. Again the surgical world witnessed a fierce battle between the conservatives and radicals in the professional world. From personal experience I know how fierce the battle was and what opprobrium attached to those who accepted Fitz's dictum, "that every case of so-called perityphlitic abscess must be regarded as primarily one of perforating appendicitis unless proven to the contrary," and his advocacy of early operation, by which he meant not merely draining the abscess but opening the peritoneal cavity itself. In other words, not to wait for the autopsy to prove his case.

To Fitz we also owe our courage in the operative treatment of intestinal obstruction, with which appendicitis was often confused in those days. His fruitful labors on the subject of acute pancreatitis and his distinguishing the hemorrhagic, suppurative and gangrenous forms of the disorder are of no less importance. The reversal of our conception of peritonitis is another of the signal effects of Fitz's work. Idiopathic peritonitis from now on became practically obsolete (although sporadic instances of an apparently idiopathic origin are still reported). We learned from Fitz and others that peritonitis is a secondary manifestation of a primary intra-abdominal lesion.

An important radical procedure in gynecological surgery is the Werthheim operation first reported in 1898, of extirpation of the uterus and its adnexa, which has brought relief to many a suffering woman in removing the menace of serious and threatening morbidity.

These years may be called the acquisitive years during which it seemed as though we were learning how many organs the human system could with more or less comfort dispense with. The pathologist and the physiologist were getting their problems from the surgeon and all three were learning invaluable lessons from their observations on the living human subjects and on the living animal as revealed by the autopsy *in vivo*. Animal experimentation went forward with a bound at this time; without it in fact, any progress in medicine or surgery is unthinkable, the benighted antivivisectionist to the contrary notwithstanding. It was the beneficence of anesthesia that also gave the experimentalist his opportunity. He has thus been able to dig deeper and deeper into the mysteries of normal and abnormal physiology and pathology, which to a great extent we have been able to apply to the human subject. The qualifying statement—to a great extent—is made because unless we bear in mind that certain processes are not analagous in man and experimental animals, we are apt to be led astray.

Progress in abdominal surgery would of course not have been possible without a corresponding evolution in the surgeon's instrumental and diagnostic armamentarium. The Kocher forceps, Murphy button, Paquelin cautery and an array of other devices; operating tables expressly fashioned for desirable changes in posture, laboratory tests, urinary and gastric analyses, the study of the blood and blood chemistry—all these have helped to make for surgical safety. We accept them as matters of course, just as we accept as indispensable the various endoscopic methods of direct inspection.

While the surgeon of fifty years ago might have predicted some of the advance I have attempted to record, I doubt whether even the most imaginative among the profession could have dreamed of the direct method of inspection provided by that notable and I may say dramatic discovery of the physicist, Wilhelm Conrad Roentgen, during the decade known in general literature as the gay nineties. When the x-ray burst upon an astonished world in 1895, there was born a new science and a new era in diagnosis and therapeusis, the progressive advances and extension of which are being unfolded before our eyes day by day. No account of surgical progress would be complete without acknowledging the remarkable gift with which Mme. Curie endowed the world in the form of her brilliant discovery of radium and its therapeutic possibilities.

Thus at the dawn of the twentieth century, abdominal surgery was supplied with undreamed of facilities for diagnosis and increasingly safe surgery. A prominent procedure for the greater safety of surgical operations is the substitution of spinal anesthesia for general anesthesia. The development of local and regional anesthesia comprises a chapter of its own in the history of medicine. Suffice it here to say that it owes its origin to Carl Koller in 1884, with the introduction of cocain as a local anesthetic in operations on the eye, and from that time onward went rapidly through its various stages, finally culminating in induction or nerve-blocking anesthesia as developed by Halstead, until today it has become the anesthetic of choice for most abdominal operations.

The evolution of surgery has brought with it a natural change in our mode of thinking, which can best be expressed as the pathological-physiologic habit of thought, as exhibited by the tendency to weigh the reasons for operation and the opportune time for interferences, in other words, the why and when to operate. The natural corrolary to this is the functional or end result. It has been well said that "leadership in surgery is passing from the operator to the thinker, from the man of strong hands to him of skillful judgment who knows when operation should be postponed or avoided."

Formerly the main, if not the only reason for operative interference was the conservation of life. Today the surgeon's responsibility extends beyond that. The demand is for conservation or restoration of function as far as possible. If asked to evaluate the tendency of abdominal surgery since the dawn of the twentieth century, that would be my first answer. My second would be: Early attention to abdominal dysfunction, careful pre-operative study and preparation, watchful, conscientious post-operative care and adequate follow-up observation. Indeed, I believe that in these the historian of the future will find the distinguishing characteristics of our time. For they imply the correlation of all the sciences that have arisen in these acquisitive and inquisitive years, as they likewise imply the free and willing co-operation of the clinician, the surgeon and the laboratorian.

We have solved many problems, we have many triumphs to our credit. But we dare not close our eyes to the many questions that still defy us; there is still much to learn. It needs but the mention of the word cancer to make us realize how much there is to learn.

More than a hundred years ago some one discussing the baffling mystery wrote these words: "Notwithstanding the numerous treatises on cancer within the last twenty years and the great encouragement held out by societies for investigating its nature and treatment, we are now almost as much in the dark concerning the disease as at any former period." This statement unforunately is as true and as significant today as it was the day it was written in 1824. We are still groping in the dark. Every now and then a light seems to be flashing in the distance but on close range it proves to be but another will-o'-the-wisp and again our hopes are dashed to the ground. All branches of the medical and allied sciences are coping with this question. The solution must come sometime. But whenever it comes, and it cannot come too soon, it will not mean a cessation of inquiry and research, for the inquisitive years will never end, man's curiosity will never be satisfied. No sooner does he succeed in solving one problem than he finds another. But with the persistence of the love of investigation and of the search for truth there is every reason to be confident that the many mysteries that remain will be deciphered and we shall perhaps know why morbid conditions arise and how to prevent their development.

ARTERIAL HYPERTENSION.*

By JAMES S. MCLESTER, M.D., Birmingham, Ala.

FEW DISEASES are of such universal interest today as arterial hypertension. What is its nature? Is it merely a symptom of some other disease such as chronic nephritis or arteriosclerosis, or is it to be regarded as a distinct entity? True, increased vascular tension occurs under a wide variety of conditions, in chronic nephritis, as a salient feature in many cases of arteriosclerosis, and as a more or less transient expression of various emotional disorders, but as we watch the development of essential hypertension and study its characteristic manifestations it becomes increasingly apparent that it is not a mere symptom complex but rather a clearly defined disease entity. It is a disease of unknown origin and of variable duration, the distinguishing features of which are increased vascular tension and a tendency, slowly or with great rapidity, to progress to a terminal stage which is signalized in varying degrees and with varying clinical emphasis by impairment of the heart, arteries and kidneys.

The manner in which hypertension is produced has been the subject of much speculation. Increased viscosity of the blood, larger blood mass and greater cardiac force, have each been put forth as a cause, but in each case the evidence has failed to withstand the test of critical scrutiny. Of especial interest has been the relationship of chronic nephritis to arterial hypertension. True, chronic nephritis, whatever its cause, is usually accompanied by increased vascular tension, but in the disease we are discussing the hypertension begins long before there is any evidence of kidney damage, whether structural or functional. The nephritis, like the myocardial change of hypertension, is merely a late manifestation of the disease, a part and parcel of the disease process, but not the cause.

In the light of our present knowledge one change in the circulatory mechanism and one only can be regarded as responsible; that is, resistance at the periphery. This resistance comes from a narrowing of the lumen of the smaller arterioles which narrowing impedes the blood flow and thus leads to increased general vascular tension. Is this narrowing produced by a spasm of arteriolar walls, or does it represent actual structural change? Biopsy studies of pieces of muscle removed from hypertension patients have shown that the width of the lumen in its relation to the thickness of the vessel wall is in the aggregate greatly lessened. It is doubtful, however, if this thickening of the vessel wall at the expense of the lumen can be looked upon as the primary factor; there is reason for believing that there first occurs, and persists perhaps for years, a spasmodic contraction of the vessel which in time is followed by structural changes ending finally in arteriosclerosis. It is tempting, too, to believe, that the sclerosis is not the result of such long continued spasm, but rather that both, first the spasm and later the sclerosis, are dependent upon some other more ultimate underlying cause.

What vessels are first involved and what causes their walls to contract? The vessels of the body are not involved universally or in equal degree and at times the process appears to be limited largely to certain anatomic areas. It is not unlikely that the vessels of the splecnic area, those which are under control of the vegatative nervous system, in the beginning at least, are chiefly involved. The vascular area of this region is enormous and its total cross-section is subject to great fluctuations, while the vessels are under the influence of vasomoter nerves which are subjected to the widest variety stimuli, both physic and chemical. If these stimuli are of such nature that sustained, long continued vascular contraction is produced, then a condition obtains which conceivably can lead to the disease which we call essential hypertension.

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

What is the nature of these influences and what is their origin? When we can answer this question we have solved the problem of arterial hypertension. Physics or emotional stimuli long continued or frequently repeated, especially when experienced by a susceptible person, can conceivably produce this chain of events; or on the other hand, chemical bodies, the result of faulty metabolism, of endocrine dysfunction or of retention of waste material, may be responsible. Time will not permit an analysis of the mass of evidence which has been presented from time to time in support of one or the other of these methods of injury, but it is easily possible that there are many factors, widely varying in nature, any one of which, or indeed any combination of which, acting through the automomic nervous system, or more directly, may produce this disease. All of this, however, is mere conjecture based on clinical observation and physiologic experiment, well considered, but nevertheless speculative.

When we attempt a statement, then, of our actual knowledge of the ultimate causes of arterial hypertension there is only one factor which we can accept unreservedly; that is, constitutional predisposition, the result of heredity. Anyone who studies the family histories of hypertension patients cannot help being impressed by the frequency with which cardiac-vascular disease appears in these families. I know of families in which for several generations more than half of the adult members have succumbed to some form of cardio-vascular disease. I have recently seen four of a family of five brothers all die before sixty of one or the other of the terminal events which usher out hypertension. Such observations are not uncommon. It cannot fairly be said that this predisposition is due to faulty habits acquired through imitation and handed down from generation to generation, for a study of the lives of these patients will convince one of the fallacy of this method of reasoning. It seems to me that in the light of present-day knowledge heredity alone can explain it. Just what traits are carried by the chromosomes and what train of physiologic disturbances they impose upon the victim of this inheritance in order to produce this disease no one to day can say; but it would appear that the person who is without this inherited predisposition is not prone to develop hypertension, no matter what his sins. No doubt the observance of good hygiene with freedom from infections and the avoidance of stress and strain are of value, but, after all, the surest way of preventing arterial hypertension is to choose one's ancestors with care.

The symptoms of arterial hypertension are fairly characteristic and taken alone will frequently tell the story. The morning headache, particularly when the complaint is made that the better the night's sleep the worse the headache, is peculiarly characteristic. Dizziness also is a frequent complaint. Particularly annoying are the vague indefinite pains in the muscles and joints which so many of these patients experience. Backache and even rheumatic pains, which are apt to be just as dependent upon the weather as the pains of true arthritis, are of frequent occurrence. Other forms of discomfort, particularly those attributed to the digestive organs are also frequent. The attempt to eradicate the cause of the digestive disorders of the old hypertension patient is as a rule a fruitless task.

The emotional and physic make-up of the victim of this disease often shows an insidious change. He may complain that he is lacking in energy and initiative, and that he feels unequal to his daily tasks. He doesn't feel entirely well, he is irritable and often exhibits emotional instability. Particularly characteristic is the dislike of the hypertension patient for a warm room; he flushes up easily and will complain of the heat in atmospheres that other people find agreeable.

Moderate dyspnoea on exertion appears as the disease progresses, and there may be other disturbances more directly referable to the heart such as extra-systoles, tachycardia, "thumping," and even angina-like pains.

The blood pressure fluctuates, sometimes to a marked degree, in the early stages, and it is only when the disease is far advanced that the tension is fixed at a relatively high figure. A systolic pressure in excess of 140 mm., certainly of 150 mm., may be taken to express hypertension. While it can be said, that other things being equal, the higher the systolic pressure the graver the outlook, we can by no means unreservedly accept the systolic pressure as a criterian of severity; too many other factors are to be considered. The diastolic pressure tells more than the systolic. A diastolic pressure above 90 mm. is abnormal, and one which remains above 110 mm., certainly 120 mm., is ominous. As in other diseases, however, opinion must be formed not from a single feature but rather from scrutiny of the entire clinical picture.

Physical examination, especially in outspoken cases, usually reveals an enlarged heart of the so-called aortic form. There may be additional evidences of cardiac overload; disturbances of rhythm are common. The electrocardiogram will show left axial deviation and perhaps other evidences of myocardial change.

Examination of the abdominal organs usually fails to reveal any local cause for the constipation and the chronic dyspepsia of which these patients so often complain.

The eye-grounds, in the earlier stages, show little beyond a certain tortuosity of the arteries. Later there may be hemorrhages and other evidences of retinal change.

The urine in the beginning shows little or no albumen and very few casts, and the concentraction test is normal. In short, there is at this stage little or no evidence of kidney impairment. It is only in relatively far advanced hypertension that we find a low, fixed, specific gravity, nocturia, and albumen and casts, and it is only when the disease is far advanced with serious kidney impairment and trouble ahead that the blood urea is increased.

While outspoken, well established arterial hypertension is always progressive, the rate of progression, and therefore the outlook, in any given case depends upon the type. A number of clinical types have been described. The elderly woman with hypertension and tendency toward obesity, who has perhaps borne several children and is approaching the menopause, represents the most benign type. Her condition of hypertension may persist for years with little or no progression. At the other extreme is the youthful person, say around 30 or 35 years of age, whose disease begins in a stormy manner, progresses rapidly, and usually ends in a few months or at least a year or so in uremia. Hypertension of this fuliminating form is just as surely malignant, it has seemed to me, as cancer. There are many other types, intermediate between these two in severity, but as a rule the older the patient when the disease first appears the more benign its course.

Since we know so little about the ultimate cause of arterial hypertension, we are obviously handicapped in our effort to prevent its development or to stay its course. Nevertheless we should not look upon this disease in too fatalistic a manner, for there are two directions in which treatment may encounter a large measure of success. It is a grievous mistake, and one to which many of us are prone, to assume because we cannot cure a disease, that all treatment is futile. We may be unable to influence the course of the illness. Experience has shown that there is a great deal which we can do in hypertension first to make the patient more comfortable, and second to teach him so to accommodate himself to his disabilities and to adjust himself to his handicaps that his usefulness will be enlarged and his life prolonged. This should be the object of treatment.

There are two groups of persons demanding treatment; first, those who have a familial tendency to hypertension or who present symptoms only in mild degree, and second, those who have the disease in an outspoken form. The person who has an inherited predisposition to cardio-vascular disease or who shows the beginning of essential hypertension, such as increased tension of variable duration when under stress or strain, should learn to live frugally. He should cultivate equanimity and repose, curb his ambitions, avoid emotional strain and eschew excesses of every kind. He should take frequent vacations. Exercise within his capabilities is all right, oftentimes beneficial, but nothing should be carried to the point of exhaustion; violent exercise is always bad. I am satisfied that exercise for middle-aged men is sometimes overdone.

The frequency with which tobacco causes harm and the extent of this form of injury is debatable, but since its excessive use by susceptible people is unquestionably related to coronary crises this possible source of trouble had best be avoided. The use of alcohol is difficult to discuss because the enormous amount of disease cured by its abuse stares us in the face. A small amount of alcohol taken at the end of the day may accomplish good for the middle-aged man in permitting him to relax and develop a peaceful somewhat detached form of mind which is distinctly beneficial. Nevertheless the dire consequences of its abuse are so clear that I am tempted to say that the patient we are discussing should avoid alcohol altogether.

The diet of a person so handicapped should be characterized by simplicity. He may eat sparingly of everything without particular emphasis on any one article of diet, but should so restrict the total quantity of food as to keep his weight just a little, say ten per cent, below the calculated normal. Much unnecessary physical impairment and loss of vigor has been imposed on these patients by the advice that they eat no meat. There is no reason whatever for rigid abstention from meat or from table salt. For the maintenance of continued vigor the patient should in moderation properly take both.

What has just been said about the life of the person who has an inherited predisposition to essential hypertension, or who experiences the beginnings of this disease applies with still greater force to the patient who presents evidence of having hypertension in a more advanced stage and in a more tenacious form. The chief difference is that in this latter instance the dietary and other restrictions should be correspondingly more rigid, the rest and repose more absolute, the vacations more frequent, and the physician's advice a little more emphatic.

Oftentimes it is advisable, if the patient's circumstances permit to begin treatment with a period of three or four weeks' complete rest in bed, preferably in a hospital. This period of treatment is intended to accomplish three things: physical rest, mental relaxation, and discipline. The physical rest will permit the heart to regain to a certain degree its disappearing competency and the digestive and other organs to improve their functional capacity. The mental relaxation, if properly guided by the physician, will not only permit a lessening of nerve tension but will also encourage the patient to acquire through contemplation a better perspective of life and a readjustment of mental attitude which will contribute greatly to his comfort and happiness. This, to me, is the most important feature of the rest treatment. The treatment accomplishes also a certain degree of discipline which is often necessary and is always beneficial.

Dietary regulation is of importance in the treatment of hypertension, but is not entitled to the place of paramount importance so often accorded it. As was just advised for threatened hypertension, so is it still more imperative in the outspoken form that all food should be limited somewhat in amount. Both because people with a cardio-vascular handicap such as hypertension should endeavor to maintain always a condition of moderate underweight, and also because they should spare as far as possible their digestive and metabolic functions, it is advisable to hold the total intake of food down to a reasonable amount, a little less perhaps than a robust man of like figure would take. This rule should apply not only to people of normal habits, but especially to those who are obese, for obesity seems at times to be directly related to hypertension. The food of the obese patient should be restricted to the point at which the requisite loss in weight is eventually (though too rapidly) attained. A loss of five or six pounds monthly is as a rule ample. This measure alone will sometimes bring marked amelioration of symptoms and halt the progress of the disease.

Since the duration of this disease is not of weeks or months, but of years and decades, it is important that the patient's vigor and physiologic efficiency be maintained at the highest level for the longest possible period. To this end a reasonably liberal protein intake is essential and since, in the earlier stages, there is no serious renal impairment, it is a mistake at this time to reduce the protein intake to a very low figure. In practice it is sometimes reduced to a dangerously low figure. It is a grievous error therefore to tell the hypertension patient with little or no kidney impairment that he should eat no meat. He should be permitted one small piece of meat daily or at least three or four times weekly. As the disease advances and as increased blood urea and fixation of the specific gravity of the urine tell of serious kidney impairment, it then becomes necessary to restrict the protein further, and perhaps eventually, when the patient has become a nephritic invalid, to eliminate meat entirely. But until that time has come only harm can result from the unnecessarily rigid restriction of protein.

There is no objection to advising the patient that he must eat no unusually salty food and that he should add no salt to his food after it comes to the table, but there is abundant experimental and clinical evidence to show that no good whatever comes from unnecessarily rigid salt restriction such as is attempted in the so-called salt free diet. I am convinced that such a diet long continued is distinctly harmful.

Morale should be sustained. The patient should be relieved as far as possible of causes of worry and should be given every encouragement which the circumstances justify. To this end he should only seldom be told his blood pressure. People who have their pressure taken at frequent intervals and, insisting on knowing the exact figure, are elated or cast down as the pressure fluctuates, usually become apprehensive and unhappy. The patient should be saved this and should be told tactfully, but firmly, that he is not to know his exact blood pressure.

Just when, if ever, it is proper to advise a man to give up his business and go into retirement is a difficult question. All depends upon the nature of his business, the burden it imposes on him, its importance to him and his family, the extent of his cardiac and other impairment, and the degree of rest he can otherwise be induced to take. As a rule it is better to make a man "slow down" a bit and thus go into a sort of semi-retirement rather than to give up business altogether.

Drugs are of value if given with discrimination. There are a host of drugs for which a specific effect has been claimed, but these are of unproven value. The liver extract devised by Major unquestionably lowers the blood pressure on some patients, but I have not been able to obtain from it any lasting benefit. The nitrites are of proven value, and sodium nitrite in doses of one grain three times daily is often given with benefit. The patient who has angina pains should be taught how to place a nitroglycerine tablet for absorption under his tongue and should carry in his pocket always a few of these tablets, or he should have with him at all times a supply of Anyl nitrite pearls. As the heart begins to fail digitalis should be given. There is a strangely tenacious belief among many physicians that vascular hypertension is a contraindication to the use of digitalis. This is a mistake. Whenever there is reason to fear myocardial failure digitalis is needed. After the maintenance dose has been determined many patients can with benefit take digitalis in small doses indefinitely, but even with small doses the patient should be told of the signs of over-dosage and warned of its dangers.

Mild sedatives are of great value in the treatment of hypertension even in its earlier stages. Of such drugs, chloral has seemed to me to be the most useful. Five grains of chloral three times daily will often make a patient more comfortable, allay his anxiety, induce sleep, and bring about an emotional stability which is of great help. The barbital preparations will do the same thing perhaps, although in my experience not so happily as choral.

Laxatives, especially the saline laxatives, are often given with benefit, not because they remove offending poisons, but rather, following the reasoning of Alvarez, because a thorough morning evacuation of the bowel makes the patient more comfortable and promotes relaxation. It is not within the scope of this paper to discuss the treatment of uremia, apoplexy or cardiac failure, in one of which events hypertension so often terminates, but there are two therapeutic measures often used in these states which can sometimes with benefit be used earlier. These are sweating and bleeding. Even before uremia threatens sweats judiciously given at appropriate intervals are often of benefit. Venesection is probably of no permanent benefit but the taking of 500 or 600 cmm. of blood will sometimes tide the patient over an apparent crisis and usher in a period of comparative improvement. When the symptoms are ominous venesection is a good measure with which to initiate a period of complete rest.

THE INTRAVENOUS ADMINISTRATION OF DEXTROSE IN RINGER'S SOLUTION.*

By J. Shelton Horsley, M.D., Richmond, Va.
(From the Surgical Department of St. Elizabeth's Hospital, Richmond, Virginia)

INTRAVENOUS therapy has an ancient though somewhat checkered history. Pepys in his diary refers to intravenous transfusion of blood as having been done experimentally. In 1666, a transfusion of blood in dogs is described, one dog being almost bled to death and then transfused from another. Pepys writes (November 16, 1666), "This noon I met with Mr. Hooke, and he tells me the dog which was filled with another dog's blood, at the college the other day, is very well and like to be as ever, and doubts not its being found of great use to men; and so do Dr. Whistler, who dined with us at the tavern."

The promiscuous intravenous administration of drugs that may be effectually given by mouth should be condemned. The intravenous injection of quinine, for example, except in grave emergencies when the patient cannot absorb quinine from the alimentary tract, may be not only useless but harmful. This has been emphasized by Norman M. Keith and also by C. C. Bass, whose knowledge of malaria is not only from the laboratory standpoint but from clinical observation. In certain emergencies intravenous therapy is, of course, valuable, but the routine intravenous administration of drugs or substances that can as well be given by mouth seems meddlesome therapeutics.

The object of this paper, however, is not to review intravenous therapy in general, an interesting account of which has been recently given by Keith, but to discuss that type which has to do largely with supplying some of the normal constituents of the blood, the salts—sodium chloride, potassium chloride and calcium—and dextrose.

Absorption of Dextrose

Before taking up the intravenous methods of administering the normal blood salts and dextrose, it may be well to review methods other than oral of giving these substances. The absorption of dextrose has been much discussed. Undoubtedly, it can be absorbed by hypodermoclysis and also from the peritoneal cavity. Thus, Sanford and Hertmeyer say that the intraperitoneal giving of dextrose in children's diseases when the intravenous method is impossible due to the size of the veins, is satisfactory. Five per cent dextrose was found to be best, never in quantities larger than 100 c.c., but it could be often repeated without ill effects.

Jerome Glasser has given 10 per cent dextrose intramuscularly when intraperitoneal injections seemed contra-indicated. Indurated areas persisted for several days in three cases and may have been hematomas secondary to blood vessel injury. One hundred c.c. were given in adults, and smaller amounts to children. If the solution was stronger than 10 per cent, some disagreeable effects were encountered. Immediate rise in the blood sugar was found after the use of 10 per cent dextrose.

McNealy and Willems carefully conducted experiments in which a loop of colon and a loop of ileum were isolated by ligatures and filled with the fluid to be tested. The loops were approximately equal in absorbing surfaces, the loop of ileum being therefore somewhat longer than the loop of colon. It was found that the amount of dextrose in grams absorbed by the loop of ileum in a given time varied from 23.2 to 59 per cent, and by the loop of colon, from 0.4 to 2.6 percent. The dextrose was in 5 per cent solution. When tap water was used in a similar way, 78.6 per cent of the water was recovered from the ileum, and 57.3 per cent from the colon. Of physiologic salt solution, in one hour 62.6 per cent was recovered from the ileum and 52 per cent from the colon. They conclude that unless the ileo-cecal valve is incompetent there is practically no absorption of dextrose from an enema, though tap water and salt solution are taken up more readily from the colon than from the ileum.

---

*Read by invitation before the Centennial meeting of the Tennessee State Medical Association, at Nashville, April 9, 1930.

In a personal communication from Dr. McNealy (Feb. 8, 1930) he says that "the addition of isotonic solutions of sodium chloride, sodium bicarbonate and alcohol seem to make little difference in the amount of glucose absorbed by the colon, which, in each instance, remains practically nil."

These observations are extremely important, because many writers on nutrition and postoperative and preoperative treatment have mentioned enemas of glucose as affording considerable nutrition.

Intravenous Administration of Dextrose

Matas, of New Orleans, first brought prominently to our attention the continuous intravenous administration of dextrose. In a series of 26 cases in which he had used this method, in some instances giving as much as 14,800 c.c. of dextrose solution over a period of several days, the benefit was often marked. He quotes Duttmann, of Poppert's Clinic, in stating that a 4.15 per cent dextrose solution is as isotonic to the tissues and blood as a 0.9 per cent sodium chloride solution.

In suppression of urine, solutions of dextrose as high as 20 or 30 per cent may be given intravenously to attract water from the tissues and to stimulate renal function. Some authorities think that the use of the more concentrated solutions of dextrose in the blood is accompanied by a certain amount of danger, though Keith believes the stronger solutions do not injure if abundant water is given. Kosaki states that dextrose in a strength of 20 per cent and over caused the destruction of some erythrocytes (McNealy and Willems). Hausmann introduced a 50 per cent solution of sacchyrose in the peritoneal cavity of rats and found that the rats quickly died of toxicity caused by the withdrawal of large quantities of fluid into the peritoneal cavity. A 4.9 per cent solution of dextrose appears to have the same osmotic effect as a 0.9 per cent solution of sodium chloride. A 5 per cent solution of dextrose is practically isotonic and is the most satisfactory strength for giving dextrose for nutrition by any route.

Matas pointed out the dangers of too much salt solution. In patients in whom the kidney elimination is deficient, and in patients with chronic nephritis or bronchitis or edema of the lungs, the danger of salt retention may be very real. Matas concludes that the isotonic solution of dextrose of 5 per cent in distilled water is probably the best medium for continuous intravenous administration.

Contra-Indications for Dextrose in Ringer's Solution

The contra-indications for giving dextrose in Ringer's solution are markedly impaired renal function, a tendency toward edema of the tissues or lungs, or cardiovascular disease in which there is a retention of salts. In such conditions the salts may be retained in the tissues to a greater concentration than normal, may absorb water, and so produce edema. When there is a toxemia in which elimination is not quite sufficient, it might be well to administer 5 per cent dextrose in Ringer's solution for half a day, and 5 per cent dextrose alone for the other half. When there is edema, it would be best to dispense with the Ringer's solution entirely. Ringer's solution consists of sodium chloride .7 per cent, potassium chloride .03 per cent, and calcium chloride, .025 per cent, in distilled water.

Any remedy sufficiently powerful to aid in a serious condition must, of course, be carefully controlled and if improperly used, may be dangerous. Even with a satisfactory cardiac and renal function there may be water-sickness. Water-sickness has been discussed by Rowntree and others, and is a very real affection. In several instances we have observed it. The early symptoms are vomiting, usually of a clear or greenish fluid, a slight puffiness of the face, especially of the lower eyelids (which is the earliest sign), and a tendency for tears to run.

These symptoms come on gradually, and when they occur the intravenous solution should be discontinued and they rapidly disappear.

INDICATIONS

Sodium chloride and potassium chloride are excreted freely by kidneys whose function is normal. Calcium is excreted by the kidneys chiefly as a phosphate, but mostly through the bowel. The isotonic 5 per cent dextrose solution is largely utilized by the tissues and the blood. Therefore Ringer's solution which contains the normal mineral constituents of the blood, with a 5 per cent dextrose which is isotonic, if properly given would be almost an ideal solution for intravenous administration so far as the absence of any injurious effects is concerned.

The intravenous administration of 5 per cent dextrose in Ringer's solution is particularly indicated in shock or hemorrhage. Its immediate effect in shock is often dramatic, and if given before shock is too profound compares very favorably with transfusion of blood. Even if transfusion is necessary later on, the blood pressure can usually be kept up with this solution, until a donor can be secured and a transfusion of blood begun. This obviates many of the late effects of a very low blood pressure, such as a weakened resistance to infection and suppression of urine. When the hemoglobin is below 45 per cent, the oxygen-carrying power of the red cells is greatly impaired. In such instances it may be well to give a transfusion of blood, and if the condition of the patient is not entirely satisfactory the administration of the intravenous dextrose and Ringer's solution can be re-established.

When there is much vomiting this solution is particularly indicated. When there is high intestinal obstruction, an additional amount of sodium chloride may be given, as Haden and Orr have called attention to the lack of chlorides and the high blood urea in this type of obstruction, and have shown the beneficial effect of such therapy.

One of the most striking indications for intravenous dextrose and Ringer's solution is the loss of pancreatic juice. In an article by Elman and Hartmann on the cause of death following the total loss of pancreatic juice, their conclusions are as follows: "From the observations herein reported, the cause of death following total loss of sterile pancreatic juice seems definite and simple. A profound dehydration results with marked loss of base bicarbonate and resulting uncompensated acidosis. The acidosis may be less marked or may even give way to a slight alkalosis if severe vomiting takes place with the superimposed loss of acid gastric juice. In either case, however, the dehydration with resulting changes in circulation is probably the main factor in the rapid death. That the fatal outcome is due to such simple chemical changes is also shown by the recovery and prolongation of life during drainage of pancreatic juice by the administration of a simple physiologic solution of sodium, potassium and calcium chloride."

Waltman Walters and Walters and Bollman showed that the loss of pancreatic fluid in dogs causes death about as rapidly as a complete high intestinal obstruction, and that the symptoms of this deficiency can be largely relieved merely by the intravenous injection of salt solution.

It is well known that physiologic solutions of sodium chloride while temporarily restoring the volume to the vascular spaces, leaves the circulation rather rapidly and, according to Keith, "its inadequacy in the treatment of hemorrhage and shock is admitted." The addition of some colloid, such as gelatin, as recommended by Hogan, or acacia recommended by Bayliss, has advocates. I have not used the acacia solution, but I have given the gelatin solution of Hogan. It will elevate the blood pressure and will tend to keep it higher than simple salt solution, but, unfortunately, a gelatin solution appears to have a deleterious effect upon the kidneys, and one patient died from suppression of urine that seemed to be at least partly due to the gelatin. I have not felt justified in trying the acacia. Since the War opinions upon its efficacy have been varied.

No one can deny the beneficial effect of a transfusion of blood, or of the intravenous injection of dextrose under proper indications. The disadvantage of gelatin, acacia, citrates, and substances foreign to the blood, is that they are not normally found in the blood and consequently their ultimate effects may be dubious; whereas, the combination consisting of the salts of the blood—sodium chloride, potassium chloride and calcium—with dextrose, contains natural constituents of the blood. Five per cent dextrose is isotonic. The normal amount of dextrose in the blood is about .1 per cent.

In malnutrition in which the stomach and gastro-intestinal tract does not apparently absorb a sufficient amount of nutrition, dextrose in Ringer's solution may be used as an adjuvant. In sepsis or peritonitis in which it is desired to fill the system as quickly as possible with fluid, dextrose in Ringer's solution is often helpful.

After extensive operations on the gastro-intestinal tract, the continuous intravenous administration of this solution is indicated. In vomiting, as from intestinal obstruction or in prenicious vomiting of pregnancy, the solution is excellent. In diarrheas or dysentery, in which there is marked dehydration, it is indicated. After operations for exophthalmic goiter or in hyperthyroidism, it is administered intravenously; the dextrose, acting as a buffer, is burned up by the increased metabolism from the drive of the thyroid gland, so protecting the tissues themselves from the effect of the increased oxidation.

When the blood pressure is low, as in shock, the solution can be run in quite rapidly; 500 c.c. or more an hour may be given with impunity until the blood pressure is satisfactory, which is usually 10 or 15 points below the normal for the individual. After the blood pressure has been stabilized, the rate of flow should be decreased.

When given for peritonitis, sepsis, dehydration, or for any condition in which the blood pressure is not abnormally low, the solution should be administered more slowly. It must be recalled that overloading the heart cannot occur when the low blood pressure is due to a deficiency of fluid in the vascular system, so that the danger of over-straining the heart is absent in shock until the blood pressure has become almost normal. On the other hand, when the blood pressure is about normal or above normal, there is distinct danger of cardiac or pulmonary injury from overfilling the vascular spaces, and here the solution should be given slowly. The contraindications for the Ringer's solution would apply when there is edema or nephritis or a threatened uremia with salt accumulation. If, however, these affections are slight and when there is an accompanying vomiting with loss of gastric juice, and possibly a regurgitant loss of pancreatic juice and bile, it would be well not to dispense with the salts entirely, but probably to give Ringer's solution and 5 per cent dextrose for twelve hours and then for twelve hours give the 5 per cent dextrose alone.

The amount of nutrition that can be delivered in this way is very considerable. While, of course, it is not attempted after a serious surgical operation, such as a partial gastrectomy, to give the normal calories, yet if even as much as one-third of the normal can be introduced intravenously which could not be made otherwise available, it would be beneficial.

According to Sherman, 1 gram of dextrose equals 3.75 calories, and the administration of 3600 c.c. of 5 per cent solution, which is equivalent to 150 c.c. an hour per day and can be readily absorbed in the first twenty-four hours after operation, would supply 675 calories. It seems obvious that, other things being equal, an ill patient who can be given this nutrition without burdening the gastro-intestinal tract for absorption should be in a better condition to withstand infection and to recover from a serious illness than a patient who does not have this nutrition.

By regulating the flow of the solution to a minimum and keeping it up for a long time, the patient can assimilate it better than if it is given in massive doses at intervals of several hours.

TECHNIC OF ADMINISTRATION

Dextrose in Ringer's solution should be made in freshly distilled water,—that is, not older than twenty-four hours. If it is older than this, even though it may be sterile, it is possible that some bacterial growths may have developed and the dead bodies of these bacteria may cause a reaction. It is important, too, to see that the rubber connecting tube has been thoroughly boiled and preferably treated, if new, by boiling it in a strong soda solution. Before the tubing is sterilized it is well to roll it under the hand and to subject it to beating and stretching, and then to run water through it, in order to loosen or carry off any scales or deposits that may have gathered. Attention to details such as these often saves a marked reaction.

If the solution is to be given for only a short time and if the veins are prominent, it may be administered by a hypodermic needle (we use a stainless steel needle, No. 20 gauge, 1½ inches long). This can be fixed in position with adhesive plaster and sometimes will permit a continuous flow of the fluid for a period of twenty-four hours or longer. Usually, however, it becomes clogged within twenty-four hours, though often the necessary amount of fluid can be given in this time. We use a glass burette so graduated that 100 c.c. of fluid are contained in 9.2 cm. of the length of the burette. With this container, which is long and slender and will hold 500 c.c. of solution, the rate of flow can be accurately gauged. With such a scale the flow can be regulated almost as accurately as by the "drip" recommended by Matas, and without the danger of the entrance of air. The flow, however, should be kept constantly going, else the needle or even a cannula will become occluded. When a cannula is used we employ one which has been devised by Dr. Guy W. Horsley and me, with an oblique opening in the end and which can be inserted much more readily than the ordinary cannula. Its point is shaped somewhat like a grooved director, and will insinuate itself easily into a comparatively small vein. The interior of the butt end is ground to fit a Luer syringe, and the cannula while being introduced can be connected with a Luer syringe filled with salt solution, and so the danger of the entrance of air is obviated. Also transfusion of blood can be done through the cannula.

The Ringer's solution may be made with tablets added to distilled water. This should make a volume of 450 c.c., but the tablets should suffice for 500 c.c. Then a 50 c.c. ampoule of 50 per cent dextrose is added, which makes a 5 per cent solution. The flow, fairly free at first, is regulated by a small set-screw clamp which permits of accurate adjustment. The usual rate of flow is about 150 c.c. an hour.

Though 5 per cent solution of dextrose given at the rate of 150 c.c. an hour does not usually show sugar in the urine, it seems best to add some insulin which makes the dextrose more available by the cells of the body. After every 500 c.c. of solution 8 to 10 units of insulin are injected into the tube while the solution is flowing. If sugar actually appears in the urine, more insulin is given.

A still more convenient method of preparing the solution is afforded by ampoules recently on the market, which contain 100 c.c. of dextrose and Ringer's solution so concentrated that when added to 400 c.c. of distilled water a 5 per cent solution of dextrose and normal Ringer's solution is made. In this way it is only necessary to have 400 c.c. of sterile distilled water in the burette, pour into it the concentrated Ringer's solution and dextrose, and shake the burette in order to secure a satisfactory mixture.

The dextrose that is put up in ampoules seems to be purer than that bought in bulk, and is much less likely to give a reaction.

This technic has been employed at St. Elizabeth's Hospital, Richmond, Virginia, since October, 1924. We have used it, either with a hypodermic needle or with a cannula, almost routinely after stomach operations instead of hypodermoclysis or proctoclysis. It is usually less objectionable to the patient than either of these latter methods. After about forty-eight hours, however, the vein becomes irritated and the tissues somewhat sensitive. At the end of this time the solution may be discontinued, but if there is further indication for it, another vein can be selected. In one instance, a patient who had a ruptured diverticulum of the sigmoid with fecal matter in the pelvis and spreading peritonitis, the patient took over 40,000 c.c. of dextrose in Ringer's solution intravenously. It was given continuously for two or three days at a time, then there was a rest of a day or two when it was resumed. The patient eventually recovered, after operations for obstruction, opening of abscesses and finally resection of the bowel.

We have used this solution in about seven hundred cases. In a vast majority of the cases it has been greatly beneficial, and in some it seems to have been actually lifesaving. In one instance, however, its use was probably harmful. This was in a man who had sarcoma of the upper small intestine. After resection of 90 cm. of the small intestine, the solution was given at about 150 c.c. an hour and within about 18 hours his blood pressure reached 138 systolic and 80 diastolic. His normal blood presure was 110 systolic and 70 diastolic. It was discontinued then, but shortly afterwards he developed hemaplegia and died. It seems probable that the rise in blood pressure, probably from the amount of fluid introduced, precipitated the cerebral hemorrhage. The patient was not only thin but 64 years of age, slightly arteriosclerotic, and was not vomiting, so there was a diminished output of fluids.

In patients who are vomiting or have fistulous openings from the small bowel, this intravenous administration can be used more freely than when they are not vomiting, and the output of urine or sweat is small. "Water-sickness" which has been mentioned, occurred a few times, but soon ceased after discontinuance of the solution.

In severe operations, such as excision of the rectum in a single stage, where shock is anticipated, we insert a cannula at the beginning of the operation and start the fluid slowly. When the blood pressure falls, or when something occurs in the operation that ordinarily would precipiate shock, the solution is turned on more freely. In this way an operation such as excision of the rectum can often be done in a single stage without the shock that would otherwise be unavoidable.

BIBLIOGRAPHY

1. Bayliss, W. M., Methods of Raising a Low Arterial Pressure, Proc. Roy. Soc. London, 89: 380-393, 1916-1917.

2. Elman, Robert, and Hartmann, Alexis F., The Cause of Death Following Rapidly the Total Loss of Pancreatic Juice, Arch. Surg., 20:333-337, Feb., 1930.

3. Glasser, Jerome, The Intramuscular Injection of Dextrose, J. A. M. A., 91, Sept. 8, 1928.

4. Haden, R. L., and Orr, Thos. G., Use of Sodium Chloride in Treatment of Intestinal Obstruction, J. A. M. A., 82:1515-1517, 1924.

5. Hausmann, W., Zur Kenntnis der toxischen Wirkung konzentrierter Zuckerloesungen. Wien. klin. Wchnschr., 38:332, 1925.

6. Hogan, J. J., The Intravenous Use of Colloidal (Gelatin) Solutions in Shock, J. A. M. A., 64:721-726, Feb. 27, 1915.

7. Keith, Norman M., Intravenous Medication, J. A. M. A., 93:1517-1522, Nov. 16, 1929.

8. Kosaki, M., A Study of Immune Hemolysin, J. Immunol., 3:109, 1918.

9. Matas, R., Continued Intravenous "Drip," With Remarks on the Value of Continued Gastric Drainage and Irrigation by Nasal Intubation with Gastro-Duodenal Tube (Jute) in Surgical Practice, Ann. Surg., 79:643-661, May, 1924.

10. McNealy, R. W., and Willems, J. D., The Absorption of Glucose from the Colon, Surg., Gyn. & Obst., 49:794-798, Dec., 1929.

11. McNealy, R. W., Personal Communication, February 8, 1930.

12. Sanford and Heitmeyer, The Intraperitoneal Use of Dextrose in the Treatment of Children's Diseases, J. A. M. A., 90:737-738, 1928.

13. Walters, Waltman, Duodenal Fistula—The Effect of the Loss of Gastric, Duodenal, Pancreatic, and Biliary Secretions from the Body, Surg., Gyn., & Obst., 44:840-841, 1927.

14. ________ and Bollman, Jesse L., The Toxemia of Duodenal Fistula. Physiologic Changes Concerned in the Production of Its Characteristic Chemical Reactions of the Blood, J. A. M. A., 89: 1847-1853, Nov., 1927.

COMMENTS ON THE EPIDEMIC OF SYMMETRICAL PERIPHERAL NEURITIS IN TENNESSEE.

By Hugh J. Morgan, M.D., Nashville

IN the latter part of February, 1930, and in early March, 1930, there appeared in the daily press dispatches from Oklahoma, Tennessee, Kentucky, Ohio, Mississippi, Alabama, and Rhode Island relative to the occurrence in these localities of a malady characterized by partial paralysis of the lower extremities. The disease occurred in epidemic form and was limited to certain counties and towns in the various states. Five cases from Johnson City, Washington County, Tennessee, were sent to Nashville and admitted to the Vanderbilt University Hospital on the service of Professor C. Sidney Burwell. Through the courtesy of Dr. E. L. Bishop, Commissioner of Public Health of the State of Tennessee, and Dr. S. S. Moody, County Health Officer, the writer was enabled to take histories and to make neurological examinations in nine cases of the disease in Johnson City, Tennessee. A much larger number were seen but not studied in detail. No case records have appeared as yet in the current medical literature. The following report is based on the group of cases seen in Johnson City and on the study of the five cases admitted to the Vanderbilt Hospital.

As far as could be determined the disease in Johnson City, Tennessee, is almost entirely confined to the working class. Young adult males are affected in the vast majority of cases. We saw no juveniles with the disease. Practically all of the patients developed symptoms after February 15th, 1930, and prior to March 10th, 1930. An unsuccessful effort was made to discover cases of more recent development. One hundred twenty cases have been reported by the Public Health officials in Washington County, and there are fifty additional cases reported from other counties (April 2nd, 1930). Undoubtedly many cases have not been reported to the Health Officers.

Only one individual gave a history of antecedent acute infection such as sore throat, coryza, or symptoms suggesting an infectious onset (chill, fever, general body aching, headache, etc.). Premonitory symptoms of soreness in the calf muscles or quivering of the calf muscles were described in several cases. However, the majority of patients stated that the first thing noted was weakness of the feet. This, in some, was followed by soreness in the calves and, in practically all instances, tenderness was present over the calf muscles on pressure. Cases were seen in whom the paralysis reached its maximum extent in forty-eight hours with complete inability to move the toes or feet. Others showed more gradual onset with a slowly progressing paralysis which did not reach its maximum for several days (one week). Those patients showing involvement of the fingers, hands, or wrists, invariably stated that the latter members did not develop weakness until after several days had elapsed from the time of onset of weakness in the feet.

All of the patients complained of coldness of the affected extremities, and many of numbness and tingling. The latter symptoms were frequently transient, existing only for one or two days. Only one complained of anesthesia.

No cranial nerve symptoms or history of sphincter disturbance was obtained from any patient.

Neurological Examination

The gait is the typical steppage gait of peripheral neuritis with dragging toes and flail-like tapping of the feet. Patients use canes or crutches and constantly hold to some object, walking from wall to chair, to bed, etc.

The affected members were invariably cold and wet with perspiration. Cyanosis was present in a few and one girl showed slight edema of the paralyzed feet. This patient showed over the shins and feet a diffuse erythema with a few papular, erythematous lesions interpreted as trophic.

Complete or partial paralysis of the muscles of the flexors and extensors of the toes and feet was the most constant findings. Dorsal flexion of the toes and of the feet was constantly impaired. In some cases plantar flexion of the toes and feet was not completely absent, even though complete paralysis of the opposing muscles was present. Weakness in the flexor and extensor muscles of the leg was seen, but in fewer patients and no complete paralysis of these groups of muscles was noted. Two cases showing involvement of the thigh muscles were seen. In every instance the manifestations of the disease were bilateral and symmetrical.

In the upper extremities the first muscles affected were those of the thumb and first finger, although complete extensor paralysis of the fingers was common. Extensor paralysis or weakness of the wrists was almost invariably present when the upper extremities showed any involvement at all. Many patients were seen who showed involvement of the flexors of the fingers and wrists, although these were less numerous. About half of the patients showed some involvement of the upper extremities whereas all of them showed lower extremity involvement.

Motor cranial nerve involvement or involvement of the trunk muscles was not observed in any patient.

Mild subjective sensory disturbances were complained of by many patients. Demonstrable sensory changes were noted in relatively few. Two patients revealed "stocking" anesthesia of the lower extremities. One of the Vanderbilt Hospital cases has shown "glove" anesthesia of the upper extremities.

Most of the patients complained of tenderness on pressure over the calf muscles. No definite tumefactions were felt along the course of the peripheral nerves.

Absent ankle jerks was a constant finding in the advanced cases. Absent knee jerks or absence of the deep reflexes of the upper extremities was not observed. The cremasteric and abdominal reflexes showed no constant change. In the cases questioned there was no history of disturbance of visceral reflexes (bladder, rectum).

A complete examination of the cranial nerves (including opthalmoscopic examination) was made in fourteen cases with negative findings.

The five cases admitted to the Vanderbilt University Hospital have been studied in detail. None have had fever. Studies of the blood, excreta and spinal fluids have yielded normal findings. On faradic and galvanic stimulation of the peripheral nerves and muscles in the advanced cases, the typical reaction of degeneration is obtained.

COMMENT

The disease is undoubtedly a variety of symmetrical peripheral neuritis characterized predominately by motor and vasomotor manifestations. Objective sensory changes are infrequent.

From a clinical point of view, there is nothing except its epidemic nature to suggest that the condition is of infectious origin. When one considers the possibility of an infectious aetiology the following significant facts deserve consideration: 1. There are no juvenile cases. 2. Clinical manifestations of an infection are wanting, both as regards history and physical findings. 3. The male population is affected in proportion to the female population as 4:1.

It seems likely that the disease is of toxic origin although the clinical picture does not conform typically to any of the well-known varieties.

Every patient admitted having drunk some type of alcoholic beverage within three weeks of the appearance of the disease. With but few exceptions all were "heavy drinkers." Practically all had drunk one or more bottles of extract of Jamaica ginger.

From the very inconclusive data at hand one is led to suspect that one or more of the extracts of Jamaica ginger marketed in this locality contained the toxic agent or agents responsible for the epidemic. The texicology of several brands is now being studied in the State Laboratories.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1930

EDITORIAL

OUR NEW PRESIDENT.

Our newly-elected President, Dr. James Bassett McElroy, was born in Columbus, Mississippi, December 30, 1866. He received his early education at Franklin's Academy located at this place, later entering the University of Mississippi at Oxford, and graduating with a B.S. degree in 1888.

Upon graduation he returned home, and began teaching school. This avocation he followed for four years. Entering the Physicians' and Surgeons' Medical School at Baltimore in 1891, he graduated with honor in 1893. Shortly afterwards he entered the active practice of medicine at Cotton Plant, Arkansas, where he remained for six months, transferring his location to Stovall, Mississippi. During the next five years he did pioneer work on malaria, especially malarial hemaglobinuria.

On November 2, 1896, he was married to Miss Halle Mai Kilpatrick, of West Point, Mississippi. To this union there was born one son, James Warrie, who is at the present time associated with his father in the practice of Medicine.

In 1898 Dr. McElroy did post-graduate work at the Johns Hopkins Hospital, Baltimore, returning home to continue the scientific malarial investigations. This work received wide recognition, and in 1900, he was elected President of the Tri-States Medical Association. Three years later he was made Chairman of the Section on Medicine of the American Medical Association. In 1904 he took a second post-graduate course at Johns Hopkins Hospital, following which he came to Memphis to practice Medicine. He was immediately elected to the Staff of the Memphis Hospital Medical College, and was appointed chief of the Out-Patient Department. The following year he was elected to the Chair of Professor of Pathology and Bacteriology. This Chair he held until the merger of the Memphis Hospital Medical College with the Medical School of the University of Tennessee in 1913. Following the merger of these institutions, he was elected to the Chair of Professor of Medicine, and in 1917 was elected President of the Faculty of the University of Tennessee. This honor he held until 1927 when at his request, he was granted a two-year leave of absence from his duties at the University. In 1929 he was elected Chief of the Division of Medicine at the University of Tennessee, with one-half-time service.

In 1920, he became a member of the College of American Physicians. In 1923 he was elected President of the Memphis and Shelby County Medical Society. In 1927 he was elected Chairman of the Section on Medicine of the Southern Medical Association. In the same year, he was appointed by the late Governor Peay, a member of the Board of Trustees of the University of Tennessee.

Dr. McElroy has contributed numerous scientific papers to Medical literature. His early writings were on malaria and amebic dysentery. The oration before the American Medical Association was on Tropical Diseases. He has contributed articles on cardiovascular diseases, the anemias, splenomegalies, and other subjects. He is the author of the text on Diseases of the Kidney in Tice's System of Medicine.

The Tennessee State Medical Association's policy of bestowing the honor of its Presidency upon its members who are deserving, was well demonstrated at the Centennial meeting. Dr. McElroy is of the highest type of medical men—truly a teacher of Medicine, and an inspiration to those who work with him. It will be a pleasure to the members of the Association to look to him during 1930 to carry forward its high standard.

WILLIAM C. COLBERT, M. D.

Dr. James Bassett McElroy, Memphis
President Tennessee State Medical Association

TO THE MEMBERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION:

No doubt every one of you who attended the recent meeting in Nashville felt a glow of pride that you belong to the medical profession, as you heard its marvelous achievements and contributions to the uplifting of humanity during the past century portrayed by distinguished speakers.

That flush became no less as we looked into the faces of our illustrious predecessors and contemplated what they and "The Tennessee State Medical Association" had accomplished in the last hundred years.

We may confidently say that the membership of this association, and consequently the association itself, has been "useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life."

You will recognize these latter attributes —efficiency, honor and usefulness, as the final purposes of our association, as defined in the second article of the constitution, with the addition that we always increase in these.

Upon the entrance of a new century in our history, it might be well for each one of us to consider carefully the means laid down in the same article to attain this end. That each one of us do his mite to unite the entire medical profession of the State of Tennessee into a compact organization, and to unite with similar associations to form the American Medical Association. For what purposes? To extend medical knowledge, to advance medical science, to elevate the standards of medical education, to enact and enforce just medical laws, to promote friendly intercourse among physicians, to guard and foster their material interests, and to enlighten and direct public opinion in regard to the great problems of state medicine. If we are capable and honest, there will be no doubt about our usefulness. The father of medicine formulated two documents—the one the Hippocratic oath to cultivate honor, the second the Hippocratic law to favor efficiency. The law was composed of five sections, some of which may not be applicable today is worth quoting:

1. "Medicine is of all arts the most noble; but owing to the ignorance of those who practice it, and of those who, inconsiderably form judgments of them, it is at present far behind all other arts. Their mistake appears to me to arise principally from this, that in cities there is no punishment connected with the practice of medicine (and with it alone) except disgrace, and that does not hurt those who are familiar with it. Such persons are like figures which are introduced in tragedies, for as they have the shape and dress, and personal character of an actor, but are not actors, so also are physicians many in title, but very few in reality."

2. "Whoever is to acquire a competent knowledge of medicine ought to be possessed with the following advantages: a natural disposition; instruction; a favorable position for study; early tuition; love of labor; leisure. First of all a natural talent is required, for when nature opposes, everything else is vain; but when nature leads the way to what is most excellent, instruction in art takes place, which the student must try to appropriate to himself by reflexion, becoming an early pupil in a place well adapted for instruction. He must also bring to the task love of labor and perseverance, so that instruction taking root may bring forth proper and abundant fruit."

3. "Instruction in medicine is like the culture of the productions of the earth, for our natural disposition is as it were the soil; the tenets of our teachers are, as it were, the seed; instruction in youth is like the planting of seed in the ground in proper season; the place where the instruction is communicated is like the food imparted to vegetables by the atmosphere; diligent study is like the cultivation of the seeds; and it is time which imparts strength to all things, and brings them maturity."

4. "Having brought all these requirements to the study of medicine, and having acquired a true knowledge of it, we shall thus, in traveling through cities, be esteemed physicians not only in name but in reality. But experience is a bad treasure, and a bad friend to those who possess it,

whether in opinion or in reality, being devoid of self-reliance and contented, and the nurse both of timidity and audacity. For timidity betrays the want of power and audacity a want of skill. There are indeed two things, knowledge and opinion, of which the one makes its possessor really to know, the other to be ignorant."

5. "These things which are sacred are to be imparted only to sacred persons, and it is not lawful to impart them to the profane, until they have been initiated into the mysteries of the science."

It is unnecessary to quote the well known oath of Hippocrates. This formed the ethical standard of the medical profession for centuries—was kept alive through the centuries by such men as Maemonides, Guy de Chauliac and Thos. Percival, whose code has been the basis of all our subsequent codes. The last code adopted by the American Medical Association and in turn by our association is recommended for careful perusal.

But after all, the medical practitioner in his relation to the state, to organized medicine, to his fellow practitioners, to his patients, to himself and those dependent upon him, will every day have moral questions to decide, which he cannot by the letter of any code, however elaborate. He must meet these in accordance with the high principles specified in the Hippocratic Oath, and with the universally recognized ideas exemplified in the Golden Rule; with consideration of the welfare of his patients paramount to his own; with respect for the interest and reputation of his colleagues; by supplementing his own judgment by the wisdom and council of competent consultation; by rendering assistance to his colleagues; by extending his professional aid to the unfortunate poor and needy; by advancing his knowledge in all possible ways in his power; by shunning advertising, frank or concealed, for self advancement; by avoiding selfishness and commercialism; by influencing his patients to appreciate their financial responsibilities to their medical advisor; by adjusting his fees to the circumstances of his patient, and by making such fees commensurate with the services rendered; by avoiding all questionable or abasing money trades with brother practitioners, or with consultants; by endeavoring to spread such ideal and high mode of practice among the physicians with whom he comes in contact; by co-operating by all suitable and just means in extending and advancing the high moral, ethical, professional and scientific principles and influences as specified in the constitution and by-laws of organized medicine. Let us make this one hundred and first year the best of our existence.

J. B. McElroy, M. D., *President.*

The Centennial Meeting

During the twenty-five days that have passed since the Centennial celebration reports have reached the office from many sources. I wish we had space to run in full the letters and complimentary statements that have been made concerning the meeting. Judging from the statements it can be said that our meeting as a whole surpassed any state meeting that has ever been held and surpassed any celebration that has ever been held.

The old century ended well and the new century was begun well.

The following appeared in the Nashville Banner on the afternoon of April 28, 1930:

"Federal Trade Commission Summarizes Steps Against Frauds"

"Washington, April 28—(AP)—In the year that the Federal Trade Commission has been policing advertising it has instituted preceedings for misstatements against 400 advertisers, and it is estimated that it had saved the public more than $50,000,000.

"The commission in a summary of the work of its special board of investigation, organized in 1921, said:

" 'It is estimated that fraudulent advertising robs the public of more than $500,000,000 a year, and it is probable that the recent work of the commission in this field has saved the public upwards of $50,000,000.'

"Since the special board began its work more than a dozen companies have discontinued business because they could not exist if their advertising were limited to truthful statements, James A. Horton, board chairman, said. He added that not once had a trade commission ruling that advertising was false or misleading and constituted 'unfair competition' been carried to court.

"The board soon is to hold a conference at White Sulphur Springs, Va., to determine whether manufacturers of sports goods are engaging in 'unfair competition' when they pay for testimonials from leaders in the sports world, especially when these leaders do not use the articles they are quoted as recommending.

"The commission said that in its year of investigation seventy-five per cent of unfair advertising 'pertained to alleged cure-alls, devices for therapeutic treatment, and drug and toilet preparations."

There is no way of knowing how much would have been saved to the public if all fraudulent advertising had been suppressed.

Proof of the wisdom of our fathers in writing into the Code of Medical Ethics the section pertaining to advertising is multiplied every day.

A NEW FORM OF MEDICAL SOCIALISM IN ENGLAND

(From American Medical Association Bulletin)

A quality which has distinguished England from other European countries and on which its success has much depended is individualism—leaving the individual to work out his own salvation with as little state interference as possible. But now socialistic views prevail. The great example in the medical sphere is the national health insurance act, and its extension has been foreshadowed in previous letters. A new form of medical socialism is on foot. "The Public Medical Service Association" has just been formed. It aims at establishing a service available to every member of the community, and thus would completely socialize the medical profession. The national health insurance act so far applies only to what is called "the working class" and a section of the middle class earning small salaries and regarded as otherwise unable to pay for necessary medical attention and the other expenses of illness. The new service is to be available irrespective of ability to pay. The idea of the promoters is that health is of such vital national importance that the question of a person's means in securing necessary treatment should never arise. At a meeting held at the house of commons, Mr. Somerville Hastings, M.P., laryngologist to the Middlesex Hospital, presided and a temporary executive committee was formed with Dr. Jane Walker, tuberculosis specialist, as secretary to draft a constitution for the association. The object is to provide a service including every necessary form of medical, surgical, obstetric, dental and preventive treatment, coordinated as one service under the ministry of health. It would entail provision of all necessary institutional treatment, consultant and specialist services and be available for every man, woman and child. Dr. Walker admits that the movement will be opposed by the medical profession, which is conservative. But she thinks that an increasingly large proportion of physicians is prepared to consider the proposal and that if legislation comes the profession will bow to the inevitable. Similar difficulties arose when the health insurance act came into operation. Many physicians refused to work it and have never come within its scope, but Dr. Walker holds that in general they themselves and not the community have suffered. To the objection to a state medical service that under it the public would have no choice of physician she replies that it is not realized how few now have choice. A physician can have thousands on his panel, have offices all over the district, pay physicians to work for him and draw the fees. But a comprehensive state service would remedy this as well as other defects of the insurance act. Something of the nature proposed is already in operation at Swindon (a town mainly inhabited by railway men and their families), where all the physicians work together and attend the entire population in rota. Arguments used in favor of a state service is that it would abolish overlapping of the functions of the various branches of medical service; that it would free physicians from the pecuniary uncertainties of private practice; that it would provide the large sums required in scientific investigation for the prevention of disease; that it would give a more equal division of physicians as between rich and poor areas, and that it would put the hospitals on a firm financial basis.

This item is a part of the "London Letter" in the *Journal of the American Medical Association,* March 22, 1930. The adoption of one socialistic scheme leads to the prompt proposal of another more far reaching in scope. We wonder just what will happen in England and in other countries that have adopted national health insurance laws when politicians awaken to the "possibilities" and take over the administration of these laws. That is one reason why the Sheppard-Towner type of legislation should be everlastingly opposed. The enactment of such legislation constitutes a first step in a program that will be ruinous.

DEATHS

Dr. G. C. Savage, Nashville, 76, died at his home on April 8th. He graduated from the Jefferson Medical College of Philadelphia in 1878.

Dr. S. A. Moffitt, of Cornersville, died on March 28th. He graduated from the University of Tennessee Medical Department in 1904.

IN MEMORIAM

Dr. Giles Christopher Savage

Never before in the history of the Tennessee State Medical Association has a greater shock come upon us than in the death of Dr. G. C. Savage, on the opening day of our Centennial Meeting. Our hearts are bowed down with sorrow as we contemplate the great loss to our own Association and to the entire medical profession of America, which the passing of this distinguished physician and internationally known Ophthalmologist has brought.

Ever loyal to the best traditions of his profession, he was an exemplar of its noblest ideals and an exponent of its most brilliant attainments. His contributions to medical literature evince an originality of thought seldom equaled. His life was a daily consecration—an enthusiastic devotion to the best in medicine—and will ever be an inspiration to us and our successors.

For more than fifty years, his life had kept pace with the progress of the Tennessee Medical Association and is intimately blended with every phase of its history. His brilliant career as Teacher, Author, and Ophthalmologist is an imperishable record on the pages of Tennessee's history, and in his death both the State and the Nation have sustained a loss beyond measure.

For the past year, he had devoted much time and thought to our Centennial history—and it is, indeed, a remarkable coincidence that his death marks the completion of that task.

He has bequeathed to us a great heritage—and it is, therefore, most appropriate that we add his name and his life's achievements as a fitting climax to our Centennial history. Be it

Resolved, That this brief estimate of some of the permanent values of the life of this great and good man, our preceptor, counselor and friend, be made a lasting record in the annals of this society and that a copy be sent to the bereaved family.

Jere L. Crook, *Chairman;*
W. H. Witt,
Stewart Lawill,
Committee.

NEWS NOTES AND COMMENTS

An analysis of the registration at the Centennial Meeting of the State Association shows some interesting facts.

The total registration was 720. This is by far the largest attendance at a meeting of the State Society. There is quite a difference between this registration and some of the early registrations as recorded by Dr. Hamer. For instance, he says in one place, "From this time on until the Civil War attendance was numbered in the 20 and 30 and occasionally fell into the 10. The lowest point reached so far as available records shows in 1849 when only nine members were in attendance."

There were visitors from other states to the number of 47. Of the 64 counties organized all were represented except eight. Of course the largest registration was from Davidson County with 202 members present. Hamilton was second with 45; Shelby and Knox with 44 each. Sixteen of the 18 members in Wilson County and 12 of the 13 Robertson County members attended the meeting. One hundred per cent of the Coffee County Society registered.

The classification for local addresses shows that 47 visitors were entertained by friends in the city and 167 gave no local address. Many of these drove in for the sessions and returned home at night. The largest number registered at any hotel was 116 at the Hermitage; 64 at the Andrew Jackson and a fewer number at the other hotels.

From a number of clippings we have received it appears that O. W. Hyman, Administrative Officer of the Medical Department, University of Tennessee, is writing various counties regarding the shortage of physicians. Attention is called to the number of doctors in the county in 1923; to the number now in the county and to the number of present practitioners now over fifty years of age. Of these older men a number will retire from active practice before long. In each case the letter states the number of physicians necessary to give adequate medical attention for the population of the county. It is pointed out that nearly 90 per cent of the graduates of the University of Tennessee return to "the old home town" to practice.

Six years training after completing high school is needed to complete the medical course. Scholarships and loan funds are available for students who need assistance and who show ability in their first year. The University is graduating enough men every year to care for the needs of the state and each county is urged to do its part in supplying students who will return to their old homes to alleviate present shortage and prevent its re-occurrence.

Such a campaign is timely. We hope someone will interest himself in the question sufficiently to start a general educational movement to instruct the public along the line of making it possible for each community to support an adequate number of doctors. The present shortage of physicians in the smaller towns is to a large extent due to the fact that too many folks never paid a doctor's bill and too many folks paid the doctor after all other debts were paid and a reasonable number of luxuries were being enjoyed by the family.

If the public ever realizes that a doctor's bill should be paid as promptly as a grocery bill or a note at the bank, we believe the public will be adequately served by competent physicians.

We have received newspaper clippings totaling 330 inches in length, giving reports of our Centennial Meeting.

St. Mary's Memorial Hospital, of Knoxville, had its formal opening April 22nd.

Dr. James K. Blackburn has been reappointed to serve on the State Board of Medical Examiners.

It has been announced that Dr. W. Gardner Rhea has joined the Wiggins Clinic at Paris, Tennessee.

Dr. Cecil E. Newell, of Chattanooga, who has been associated with his uncle, Dr. E. T. Newell, for the last two years, has accepted a three-year scholarship at the Mayo Clinic.

Dr. John Burch, Nashville, was elected President of the Southern Society of Clinical Surgeons at the Chicago meeting.

Work on the new $2,000,000.00 medical plant for Meharry Medical College was begun on April 21st. The contract calls for completion of the buildings in sixteen to eighteen months.

Dr. O. O. Jones, roentgenologist at the Crook Sanatorium for the past two years, left Jackson April 25th to accept a position as anæsthetist and roentgenologist with a clinic at Houston, Texas.

COUNTY SOCIETIES

Bedford County—On April 17th, Dr. W. H. Avery spoke on the "Toxemias of Pregnancy." Discussion opened by Dr. J. K. Freeman. A very profitable meeting was enjoyed by all present.

Davidson County—April 15th, "The Treatment of Gonorrheal Endocervicitis by Electro-Coagulation," by Dr. P. G. Morrissey. Discussion opened by Dr. L. E. Burch.

April 22nd—About 150 members of the Academy were guests for dinner of the Nashville Tru-li-Pure Milk Company. After eating many good things, a paper was read by Dr. H. B. Brackin, subject, "The Type of Work Being Done by the Central State Hospital for the Courts of Tennessee." Dr. W. S. Farmer opened the discussion. Many others spoke on various points of the paper.

April 29th—Dr. William Cate read a paper on "Syphilis of the Aorta." Dr. Sidney Burwell opened the discussion.

May 6th—"Renal Tuberculosis," by Dr. Henry L. Douglass. Discussion opened by Dr. Perry Bromberg.

"A Local Rabies Report" by Dr. R. C. Derivaux.

Dyer, Lake and Crockett Counties—On April 2nd the regular scientific program was given by visiting doctors from Memphis. Papers were presented by Dr. R. C. Bunting on "Epidemic Encephalitis"; Dr. H. F. Crawford, on "Entamebiosis"; Dr. W. T. Black, on "Diseases of the Cervix."

A case was reported by Dr. W. L. Summers of Ridgely. Dr. C. L. Denton of the Baird-Brewer General Hospital presented a patient suffering from the Jamaica Ginger malady. Drs. R. L. Motley and R. C. Bunting of Memphis discussed the case. The consensus of opinion seemed to be that the malady is an infectious disease rather than a chemical poisoning. It appears that there is an incubation period of three or four weeks in all the 25 cases reported in Dyer County. Rest of the affected limbs was said to be an important factor in the cure. It was said that the paralysis will continue only a few weeks.

May 7th—"Case Report—Caeserian Section, Ruptured Uterus," by Dr. W. P. Watson, Dyersburg.

"Acute Mastoiditis," by Dr. J. D. Brewer, Dyersburg.

"Cholecystitis," by Dr. J. P. Baird, Dyersburg.

"Biliary Duct Infection," by Dr. Lyle Motley, Memphis.

Gibson County—The Society met in Trenton on March 31st with nineteen present.

Dr. F. L. Roberts of Trenton was elected Secretary to take the place of Dr. James A. Crabtree, who has moved to Nashville.

Dr. Horton Casparis, of Nashville, discussed the question of tuberculosis in children.

Dr. John Jackson, of Dyer, read a paper on "Infant Feeding."

Drs. Foster, Hickerson and Handley discussed the epidemiological work on tuberculosis in Gibson County. A committee was appointed to arrange for regular monthly meetings and a concerted effort is going to be made to stimulate the Gibson County Medical Society.

Hamilton County—The following papers have been read:

April 17th: "Osteochondritis With Report of a Case," by Dr. G. M. Roberts. Discussion opened by Dr. J. B. Killebrew.

April 24th: "Etiology and Treatment of Uterine Bleeding," by Dr Lucius Burch, Nashville.

"Surgery of the Nervous System," by Dr. Thomas D. McKinney, Nashville.

May 1st: "Tumors of the Breast," by Dr. J. A. Reynolds. "Malta Fever," by Dr. Leopold Shumacker.

Discussion opened by Drs. E. D. Newell and C. E. Homan.

May 8th: "A Simplified Serum Reaction in the Diagnosis of Syphilis," by Dr. Cecil E. Newell and Alton Bunyard.

Discussion opened by Dr. T. C. Crowell.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—The Five-County Medical Society met at Hohenwald on March 25th with the following program:

"Injuries of the Elbow Joint," by Dr. W. E. Boyce, Flatwoods. Discussed by Drs. O. H. Kirk, Linden and G. N. Springer, Hohenwald.

"Treatment of Goiter by X-Ray," by Dr. J. W. Danley, Lawrenceburg. Discussed by Drs. W. O. Floyd, Nashville, T. J. Stockard, Lawrenceburg, and Watt Yeiser, Columbia.

"Cancer of the Uterus," by Dr. W. O. Floyd. Nashville. Discussed by Drs. J. H. Tilley, Lawrenceburg, O. H. Williams, Savannah, and W. K. Edwards, Centreville.

"Malaria As Treated One Hundred Years Ago," by Dr. H. C. Boyd, Waynesboro. Discussed by Drs. C. V. Stephenson, Centreville, and T. A McAmis, Lawrenceburg.

Knox County—April 22nd: "The Childhood Type of Tuberculosis," by Dr. James F. Brewer. Discussed by Drs. Joe T. Smith, J. B. Naive and C. J. Carmichael.

April 29th: Mr. Malcolm McDermott, Dean of the Law Department, University of Tennessee, talked on Medical Jurisprudence. A large attendance was present and all enjoyed the paper.

May 6th: "Surgical Management of Carcinoma of the Colon and Rectum," by Dr. C. L. Chumley. Discussion led by Dr. V. D. Holloway.

Madison County—On April 1st, Dr. Herman Hawkins presented a paper on "Vitamines." A general discussion followed and a number of ideas of practical use were brought out by the paper and discussion. Clinical cases were presented by Drs. J. W. McClaran, Jere L. Crook, Earle Goyer and Jack Thompson.

MEDICAL SOCIETIES

East Tennessee Medical Society—The following program was given on May 8-9 at Kingsport:

PAPERS—MORNING SESSION, MAY 8TH

Dr. Fred E. Marsh, Chattanooga, Tenn., "Achlorhydria." Discussion opened by Dr. C. J. Carmichael, Knoxville, Tenn.

Dr. Robt. S. Leach, Knoxville, Tenn., "Eye Manifestations in Syphilis." Discussion opened by Dr. Geo. E. Campbell, Johnson City, Tenn.

Dr. J. E. Carson, Maryville, Tenn., "Complications Arising from Injuries to the Abdominal Organs." Discussion opened by Dr. John B. Haskins, Chattanooga, Tenn.

Dr. R. B. Wood, Knoxville, Tenn., "Tremors." Discussion opened by Dr. L. E. Coolidge, Greeneville, Tenn.

Dr. H. P. Hewitt, Chattanooga, Tenn., "Analgesia and Anesthesia in Obstetrics." Discussion opened by Dr. G. A. Williamson, Knoxville, Tenn.

Dr. Fred K. Garvey, Knoxville, Tenn., "Infection of Prostate and Seminal Vesicles." Discussion opened by Dr. Tom R. Barry, Knoxville, Tenn.

AFTERNOON SESSION, MAY 8TH

Dr. S. S. Marchbanks, Chattanooga, Tenn., "The Value of X-Ray Therapy in Acute Conditions." Discussion opened by Dr. H. H. McCampbell, Knoxville, Tenn.

Dr. J. L. Hankins, Johnson City, Tenn., "Etiology of Gastric Ulcer."

Dr. E. R. Zemp, Knoxville, Tenn., "Fundamental Principles of Gastric Ulcer Therapy."

Dr. Richard Barr, Nashville, Tenn., "The Principles Involved in the Surgical Treatment of Peptic Ulcer."

Dr. Stuckey F. McIntosh, Chattanooga,

Tenn., "William Beaumont." Discussion opened by Dr. S. R. Miller, Knoxville, Tenn.

EVENING SESSION FOLLOWING DINNER

Presidential Address, Dr. G. Victor Williams, Chattanooga, Tenn., "Twilight or Dawn."

Dr. Seale Harris, Birmingham, Ala., "Home Treatment of Diabetes."

Dr. Francis C. Grant, Philadelphia, Pa., "Treatment of Cranial Trawma."

MORNING SESSION, MAY 9TH

Dr. W. H. Reed, Kingsport, Tenn., Caesarean Section." Discussion opened by Dr. Eben Alexander, Knoxville, Tenn.

Dr. L. C. Olin, Maryville, Tenn., "Interpretation of the Blood Count." Discussion opened by Dr. R. V. DePue, Knoxville, Tenn.

Dr. C. P. Fox and Dr. C. P. Fox, Jr., Greeneville, Tenn., "Some Case Reports from the Greeneville Sanatorium and Hospital." Discussion opened by Dr. H. L. Fancher, Chattanooga, Tenn.

Dr. O. S. Hawk, Kingsport, Tenn., "Subacute Bacterial Endocarditis." Discussion opened by Dr. J. J. Waller, Oliver Springs, Tenn.

Dr. A. M. Patterson, Chattanooga, Tenn., "Surgical Management of Biliary Diseases." Discussion opened by Dr. E. T. West, Johnson City, Tenn.

Dr. Lee H. Gibson, Johnson City, Tenn., "Goiter." Discussion opened by Dr. C. L. Chumley, Knoxville, Tenn.

Dr. Nat Copenhaver, Bristol, Tenn., "Some Interesting Case Reports." Discussion opened by Dr. J. G. Eblen, Lenoir City, Tenn.

The American Association for the Study of Goiter will be held in Seattle July 10-11. The preliminary program lists 34 papers by recognized authorities in the goiter field. For full particulars write Dr. J. Tate Mason, Chairman, Program Committee, 1115 Terry Avenue, Seattle, Washington.

The American College of Physicians will hold its Fifteenth Annual Clinical Session at Baltimore, Maryland, from March 23-27, inclusive, 1931. The Lord Baltimore Hotel will be headquarters.

Dr. Sydney R. Miller, Baltimore, as President, will have charge of the selection of the general scientific program. Dr. Maurice C. Pincoffs, of Baltimore, has been appointed by the Board of Regents as the General Chairman of the Session, and will make all local arrangements, including the making up of the program of clinics. Business details will be handled by the Executive Secretary, Mr. E. R. Loveland, from the College headquarters, 133-135 S. 36th Street, Philadelphia, Pa.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.

Medical Arts Bldg., Nashville

Sodium Iso Amy-Ethyl Barbiturate in Goiter Surgery. Goethe Link, M.D., Indianapolis, Indiana. Current Researches in Anesthesia and Analgesia. January, February, 1930.

It is the author's purpose not to argue the desirability of one or the other method, but to give his experience with a method by which surgical procedures may be accomplished with better protection of the patient against psychic insult, pain and other physiologic disturbance.

One hour before operation morphin gr. 1/4 and atropin gr. 1 300 are given hyperdermatically. Immediately preceding operation an intravenous injection of sodium iso amyl-ethyl barbiturate is given with larger percentages of oxygen—vomiting is rare.

The injection is given in the patient's room which enables us to relieve the patient of the horror of an anesthetic. If given too rapidly there might occur an alarming fall in blood pressure. There were no deaths the author's series attributed to this method. A few patients will exhibit an incoherent nervous excitement when coming out of the influence of this drug. He does not advocate sufficient doses for major surgery without the combined use of some other agent preferably nitrous oxide-oxygen.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.

Medical Building, Knoxville

Spinal Fluid in Epidemic Meningitis, C. R. Ferris and P. F. Stookey. Missouri State Med. Assoc. Jour., March 1930.

The authors studied specimens of spinal fluid from forty-five patients with epidemic meningitis, of these twenty-seven recovered and eighteen died, a mortality rate of 40 per cent. The average cell count of the spinal fluid on admission was 16,903, the maximum count was 57,000 and the minimum count was 4.5. In fourteen cases the cell count on admission was 20,000 or greater. The differential count showed the polymorphonuclear leukocytes to predominate, being 95 per cent or more in almost all the cases. Meningococci were found in all cases except one, in which the patient had received the initial intraspinal treatment of antimeningococcic serum before admission. The average white blood count was 22,609, ranging from a maximum of 45,000 to a minimum of 4,000. On one of the cases they encountered the syndrome of Froin. The few cubic centimeters of fluid that could be withdrawn on spinal puncture were xanthrochromic, appeared much like blood serum, and clotted almost immediately in the tube. Coagulation could be inhibited by using 2.5 per cent solution citrate. It has been their experience to find that in cases presenting this syndrome, death usually occurs within forty-eight hours after the spinal fluid is first observed to clot. Of the twenty-seven patients who recovered, treatment was stopped in two with cell counts of 6,300 and 2,650. In the other twenty-five cases the cell counts ranged from 90 to 1,800, an average of 871 cells.

The percentage of polymorphonuclear cells in differential count ranged from 13 to 90, with an average of 53.6. This gives an average of 46.4 per cent of mononuclear cells. The authors consider a spinal fluid which is free from organisms and whose total cell count is approximately 1,000 with a differential count of nearly 50 per cent or more of lymphocytes, as a criterion for the cessation treatment.

Effect of Serum from Pregnant Women on Estrual Cycle of Guinea-Pig, G. L. Kelly and L. Florence, Augusta, Ga. Surg., Gyn. and Obs., February, 1930.

These authors undertook to ascertain whether injections of serum from women known to be pregnant would inhibit estrus in the guinea pig. The theory was that during pregnancy there is an excess of corpus luteum hormone over the estrus producing hormone and on the basis of the knowledge that the corpus luteum hormone inhibits estrus. Only animals that were healthy and regular were used. These were divided into three groups, one group used as test and others as controls. One control group received injections of serum from non-pregnant women and another control group received injections of a 1 per cent peptone solution. The results in the first group showed a delay in the onset of estrus, the postponement varying from three to eight days, with an average of six days. In the second group, serum from non-pregnant women was injected, each one receiving a total of from 12 c.c. to 20 c.c. over a period of four days in increasing dosage. On this group the onset of estrus was postponed from 0 to two days, the average being 0.8 day. In the third group each received a total of 20 c.c. of 1 per cent peptone solution in four days. In none of the members of this group was there any delay in the onset of estrus. The authors have not as yet made any effort to ascertain whether the effects vary if the serum is obtained from women in early, middle, or late pregnancy.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Eczema—Some Recent Contributions to Its Study, by Samuel J. Ayres, Jr., M.D., Los Angeles, Cal.

In the Journal of California and Western Medicine the author has reviewed the literature covering the past five years. This review serves to show that the ideas and conceptions of clinical entity known as eczema has been greatly broadened. He further points out that eczema is not within itself a disease entity, but is rather a clinical symptom with multiple etiology and much the same category as a headache. He also states that we are not justifiable in making a diagnosis of eczema unless we either state that the cause is undetermined or give the actual cause. It may be due to internal metabolic disturbances, infection, or foci of irritation. The external causes may be due to local chemical irritations and bacterial or fungus infections.

He quotes from Klauder and Brown's series of studies which seem to show that there is a definite relation between the calcium-potassium ratio as relating to cutaneous irritability. The higher the blood calcium and the lower the potassium the less cutaneous sensibility is found.

Note: I concur in the author's statement that eczema is a symptom rather than a disease entity.

INTERNAL MEDICINE

By R. B. Wood, M.D.
Medical Building, Knoxville

Remote Symptoms of Gallstones, by C. W. Cowdan, M.D., Louisville, Ky., in Sou. Medical Journal, Vol. xxiii, No. 4.

Using the records of 100 patients whose history and physical examinations had been carefully tabulated, the author finds the more common associated conditions of cholecystitis to be:

Gallstones, 28 per cent.
Hypothyroid states, 20 per cent.
Myocardial Diseases, 19 per cent
Gastric or Duodenal Ulcer, 16 per cent.
Hypopituitary state, 14 per cent.

The basal metabolic rate in 72 per cent of cases was now with an average of minus 11.8 per cent, practically the same as in other chronic diseases. Sub or anacidity prevailed. Cholesterol averaged 162.2 mg. per 100 c.c., which is very close to normal, uric acid and urea normal, except where kidney involvement was present. Blood sugars were not low in cases of hyperacidity or high in anacidity, in fact the opposite. The closeness of symptoms in cases of cholecystitis to those of duodenal ulcer is commented on, briefly. Attention is called to the confusion possible in cases of gall bladder pathology with symptoms referable to the region of the gall bladder. Air hunger and embarrassed respiration is frequently seen in distension of the bile ducts and gall bladder. The symptoms are too similar to exclude either cardiagraphic or cholecystic study.

The Clinical Value of Cholecystography, by R. T. Wilson, M.D., in Sou. Med. Journal, Vol. xxiii, No. 4.

The value of any remedy that can be utilized in making a diagnosis of a condition that affects 10 to 20 per cent of the population is inestimatable. The popularity of cholecystography is attested by the procedure constituting 9 per cent of the author's work during the past year, while previously it had been less than 2 per cent. Of methods used the oral administration is preferred, and using this technique a correct diagnosis of stones was made possible in 94.1 per cent. In 139 of 163 patients who had cholecystoectomy, 85.3 per cent gave positive roetgen ray evidence of disease.

Of 18 strawberry bladders 14 showed x-ray evidence of disease.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Treatment of Chronic Dacryocystitis, G. Campbell, Canadian Medical Journal, 1929.

To offset the impression gained from numerous reports that conditions of the lacrimal sac belong exclusively to the rhinologist, Campbell states that he is still doing total extirpation of the lacrimal sac by the external route. Prophylaxis should play a great part in the conditions that have an etiological factor in the nose. In the routine medical examination, lacrimation is likely to be passed over lightly. Prevention of these cases has not received sufficient attention, a thorough investigation is needed. Pressure over the sac and syringing may be effective early. When through gross pathological changes the sac ceases to function in the driving of the tears through their natural channel, the only rational method of dealing with the lesion is to remove the sac entirely by the external route.

This the author has done for more than twenty-five years by the original method of Meller, in patients from thirteen to seventy-four years of age, and he does not know of any undesirable results. He pays particular attention to curettage of the nasal duct. It is all done through a curved incision 12 mm. long, which has produced no visible scar. Among about 100 cases recently communicated with, only two had lacrimation present all the time, and in the one of these seen no pus was ever present, while the other patient suffered very much from constipation and had "neuritis and kidney trouble." Bacteriological findings before operation included xerosis bacilli, staphyloccocci, streptococci, and pneumococci, not always in pure culture. Postoperative tests were not always made, if the eyes were clean such tests did not seem necessary, and such tests when made had proved negative.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

Manipulation of Joints, by H. Heyman, M.D., F. A. C. S. Journal Bone and Joint Surgery, 1930.

"The object of this paper is to present the subject of manipulative methods in selected cases of stiff and painful joints." The author points out the undoubted fact that in many cases people get results by the maneuvers of bone-setters, whereas physicians have failed to give relief. He suggests that we learn and appropriate from this and similar cults what is useful and seek to protect the public from the dangerous elements. He points out the fact that the great prevalence of osteopathy, chiropractic and other cults is due to the continued use of undue immobilization of joints in injury or disease, or to neglect on the part of the physician in treating such chronic affections. No acute condition should be manipulated. On the other hand he enumerates a number of conditions in which motion or skillful manipulations may be most useful. The article is too long and comprehensive to be satisfactorily abstracted. His summary is as follows:

Summary: "Forcible manipulations accomplish relief from joint pain and stiffness by the rupture of adhesions, or by the reduction of a displaced fibrocartilage in internal derangement of joints, as in the knee, wrist or jaw. This important form of therapy is being neglected by members of the medical profession who should become familiar with the methods of manipulation. Unintelligently applied force is inherently a dangerous means, and the use of extreme force is always to be condemned. The public, and many physicians as well, has been led to believe that treatment by manipulation is not included in the resources of the qualified physicians or surgeon. There is nothing mysterious in the art of the bonesetter, and the rationale of so-called bonesetting in the indicated case is readily understood when we review our knowledge of the anatomy and pathology of joints. By careful observation of our patients and the recording of our results we can put this procedure on a rational basis."

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

The Treatment of Erysipelas in Infants: Report of Thirty-Three Cases Treated with Antistreptococcus (Erysipelas) Serum. R. Cannon Eley, M.D., Amer. Jour. Dis. Children, March 1930.

The mortality rate of erysipelas in infants is reported to range from 90 per cent to 14 per cent, most writers giving a rate above 50 per cent. Since Birkhaug first reported the use of an antitoxin in the treatment of this disease in adults, a majority of those using this preparation report a decrease in mortality rates, though some do not. The author treated thirty-three infants with Birkhaug's serum and tabulates the results for each case. Each patient was given 10 c.c. of serum on admission to the hospital and this dose was repeated daily as long as the lesion persisted. The injection was given intramuscularly, but in those cases that were desperately ill on admission, the first dose was given intravenously, succeeding doses being given intramuscularly. The number of injections varied from two to eight, depending on the duration of the case.

Of 19 patients receiving serum within 72 hours of the onset of the disease, 3 died, these three having serious complications at the time treatment was given. Of 14 cases treated after 72 hours from the onset of the erysipelas, 9 died. Thus the author concludes that the earlier the serum is given the better the results. Patients receiving the serum after the disease had existed several days showed no improvement, while those that were given serum a few hours after the onset of erysipelas showed marked improvement.

Recurrences developed in two cases, both of whom recovered following a second course of serum. A serum rash developed in 12 patients. The duration of temperature was much shorter in cases receiving serum early. In many there was an abrupt fall in temperature after treatment, and this occurred so consistently after giving antitoxin that it seemed to justify the belief that the antitoxin was responsible for the improvement.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

The Relation of Trauma to the Etiology of Inguinal Hernia. Shafer, F. William. The Journal of the Medical Society of New Jersey, 27. 111-114. Feb. 1930.

The old English term "rupture," which means a tearing asunder of the tissues, is largely responsible for the traumatic theory of hernia, and should be altogether discarded.

In order to understand this condition let us reflect a moment on the development of this part of the human body. At the third month of intrauterine life, the testes are developed in the lumbar region just below and in front of each kidney, and behind the peritoneum. There are two folds of peritoneum formed: the upper, plica vesicularis, containing the spermatic artery and veins, and the lower, the gubernaculum, leading down through the inguinal region into the scrotum. At the sixth month the testicle descends to the internal ring, and at the ninth month it has passed through the inguinal canal, emerged through the external ring and occupied its final position in the scrotum.

In passing it is preceded by a process of peritoneum, the vaginal process the long neck of which, after passage of the testicle, is called the funicular process. When the testicle descends, it leaves in its trail within this long neck of peritoneum, the vas and its artery, the spermatic artery, pampiniform plexus of veins, sympathetic nerves, and lymphatics, and these structures, together with the funicular process, which has now lost its patency and become just a fibrous cord, constitute the spermatic cord in the male. If for any reason this sequence of events does not follow in an orderly manner, or the fascia, muscles and tendons which enter into or take part in formation of the inguinal canal with its internal and external rings, are not normally developed, then the two conditions are present for the development of an inguinal hernia: the presence of a sac and the absence of normal development of this region, either of which favors its production.

If the sac is congenital then there may be a hernia with a normal structural development of the abdominal wall. If the sac is acquired then there must be a relative underdevelopment of this region as compared to the rest of the abdominal wall. This regional development weakness may involve the entire abdominal wall, but not all the structures which enter into the construction of the abdominal wall are involved to the same degree. It has always been taught that musculature is the important item in hernia development. As a matter of fact, the muscles play the least part. The fascia play the most, and the tendons are next in importance. Therefore, congenital defect is always a part of the picture, and without this there can be no hernia.

If the sac is present, then the modus operandi, as explained by Lucas Championniere, who in 1875 was the first to recognize the importance of removal of the sac in radical cure of hernia, is that the intra-abdominal pressure, but this semi-liquid fat is easily influenced by pressure and readily protrudes at any weakened place in the abdominal wall.

I have never seen a case of traumatic inguinal hernia, either direct or indirect, but I have observed many cases of non-traumatic inguinal hernia. A traumatic inguinal hernia is a surgical curiosity and so rare that with mere mention and a few words of explanation we can pass it aside. Trauma means injury, inguinal means location, and hernia means a protrusion of some part or parts of an intra-abdominal viscus. Therefore, a protrusion in this location through an injury means laceration or avulsion of the tissues, with haemorrhage and exudation, associated with all the signs and symptoms of an injury.

A traumatic hernia may occur anywhere in the abdominal wall, most likely at its weakest point, but usually not at a normal hernial opening, seldom as a direct hernia, and never as an indirect inguinal hernia.

It results from cumulative effect over a considerable length of time. The accident is the occasion, not the cause, the origin being congenital. We should standardize our knowledge. There is no uniformity concerning our knowledge of inguinal hernia at the present time, New Jersey follows the German-Swiss code on traumatic hernia, which states that it must appear suddenly with the history of an accident, be painful but have no previous history of hernia, and be examined by a physician within 48 hours. Pennsylvania follows the English code, that an excessive strain must be regarded as an injury: a strain may cause protrusion of the bowel and is compensable even though weakened by a congenital defect or pre-existing hernia.

Pellatin and Cloquet demonstrated the true etiology of inguinal hernia in the eighteenth century. R. Hamilton Russell, of Melbourne, Australia, by a most complete investigation, recently came to the conclusion that practically all inguinal are congenitally acquired and exist from birth.

From the standpoint of efficiency, it is important to examine carefully every employee for a real or potential hernia, and to re-examine every potential case at stated intervals, as only 0.5 per cent develop hernias after examination.

Conclusions: All inguinal hernias are congenitally acquired, and therefore all have a congenital phase. The abdominal wall and a sac are implicated in all inguinal hernias. These two phases may involve either the sac or the abdominal wall. If the congenital phase is the sac and the acquired phase the abdominal wall, then the resulting form is an indirect hernia. If the congenital phase is the abdominal wall and the acquired phase is the sac, then the resulting form is a direct hernia.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxvill·

Traumatic Orchitis and Hydrocele. Miley B. Wesson, M.D., N. West. Med., Vol. xxviii, No. 4.

Epididymitis, epididymo-orchitis and hydrocele are due directly or indirectly to inflammation and never to trauma. In thirty-two years of medical supervision of university athletics Dr. Storey states that he has never seen a case of traumatic orchitis. He further notes that epididymitis of venereal origin did not occur any more frequently in athletes than in those students not participating in violent exercises.

Almost any bacteria in blood stream may enter the testicle and if there is a lowered resistance of the gland, or an overdose of the bacilli, a foothold may be gained and infection result.

It is often difficult to decide the relation of trauma to tb. epididymitis. Trauma undoubtedly predisposes localization of an already diseased organ, but before tb. epididymitis can be attributed to trauma, two conditions are necessary—first the blood must be filled with the bacilli from a traumatized focus such as an advanced pulmonary lesion, etc.; secondly, that the testicle or epididymis must be so anatomically damaged that the place of injury produces a suitable cultural medium for the settlement of the tubercle bacilli from the blood stream. Trauma as a cause of tuberculous epididymitis therefore is theoretically possible but practically extremely rare.

Gonorrhea or tuberculosis of the epididymis are the two infections which most often produce symptomatic hydrocele. Chronic hydrocele is caused directly by infections of the pneumococcus, B. Coli, typhoid bacillus, spirochaete and indirectly by erysipelas, rheumatism and neoplastic growth. Injuries at birth have been held responsible for certain cases of congenital hydrocele. Chronic inflammation of any kind predisposes to hydrocele.

He reports seventy cases of traumatic orchitis and thirty of traumatic hydrocele. He concludes that seminal vesiculitis is responsible and that hydrocele is due to an inflammatory blocking of the lymphatics of the scrotum.

On the Nature and Treatment of Typhoid and Paratyphoid Bacilluria and Cystopyelitis. Lewellys F. Barker, Baltimore, Md. Journal Urology, March 1930.

A brief review on the incidence, mode of entrance of organisms, and the course of the usual bacilluria and cystopyelitis is given with a report on some remarkable results obtained in cases treated by the Schottmuller method of treatment.

Cystopyelitis and bacilluria are not infrequent sequels to typhoid and paratyphoid fever, occuring in probably 20 to 50 per cent of cases. It may spontaneously clear up at times but frequently is persistent and may continue for years. Gwyn records a case of cystitis where the typhoid bacillus was isolated five years after the attack.

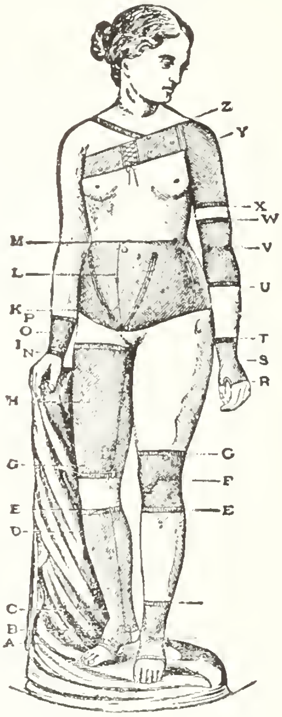
The bacilli may enter the urine through the blood stream or by ascending infection along the urinary tract. The latter is more frequent in women than men because of the short urethra.

The symptoms usually noticed are bladder symptoms, such as frequency and tenesumus along with a marked cloudiness of the urine. If a pyelitis is present there is fever, chills and abdominal pain accompanied by nausea and vomiting for a period of a week or longer. Recurrent attacks are the rule.

The usual treatment of attempting to sterilize the urinary tract by caprikol, urotropin, etc., has been very unsatisfactory. The condition is even resistant to lavage the kidney and bladder with antiseptics. Intravenous therapy is variable in its results.

The author submits the result on one case in which the Schottmuller technique—namely, injection of strong solutions of silver nitrate into the bladder, was used. One instillation only was necessary and the patient was rapidly relieved, with no recurrence.

He claims that the treatment is equally as efficacious in bacilluria due to the colon bacillus.



Tafel's "Verilite."

Seamless Elastic Stockings

Relieves and Prevents

Swollen Limbs, Sprains, Dislocations and Varicose Veins

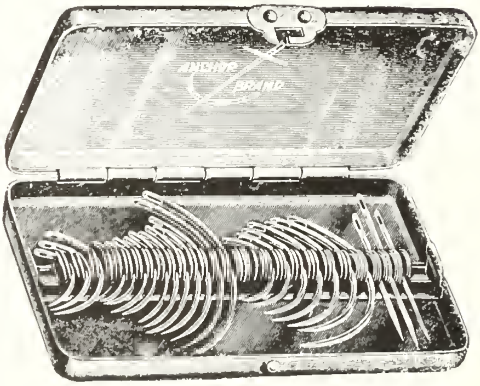
"Notair Top Adds Wear"
PATENTED
"No Other Can Give Such Comfort"

We manufacture
ARCH SUPPORTERS, TRUSSES
ORTHOPEDIC APPLIANCES, ETC.

THEO. TAFEL CO. **Nashville, Tennessee**

STAINLESS Steel ANCHOR BRAND Surgeon's Needles

A Needle You Can Depend On In All Emergencies



SPECIAL INTRODUCTORY OFFER!
This Splendid Nickel-Plated Needle Case FREE with 2 Dozen Assortment of ANCHOR NEEDLES, $3.00

ANCHOR NEEDLES are made of STAINLESS Steel and of course won't rust, tarnish and corrode. What is even more important, you will find them the toughest, sharpest, safest needle you ever used. They will not break or bend in use. We carry a complete stock at all times.

Your hospital should have an ANCHOR CABINET. Ask us about it.

Nashville Surgical Supply Co.

401 Church Street
NASHVILLE, TENN.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII JUNE, 1930 No. 6

THE RETURN OF THE IMMORTALS OF MEDICINE AN HISTORICAL PAGEANT*

Foreword: Appropriate to the occasion of the one hundredth anniversary of the organization of the Tennessee State Medical Association and in conformity with the more or less general historical and memorial character of the 1930 session as a whole, a pageant depicting a number of the most significant contributions to medicine was decided upon as the feature of the program of entertainment.

More or less similar pageants have been presented before and elsewhere—most recently in Atlanta, where, on January 3, 1929, the Fulton County Medical Society celebrated its Anniversary and presented "The Eleven Immortals in Medicine."

For the information of any who might be interested in the details of the local presentation, the following is a brief description. The presentation was presided over by a Master of Ceremonies, who by an appropriate introduction and by interpolation of suitable remarks, provided a "background" which served to bridge together the various historical periods. The characters were presented in a "shadow-box" which consisted of a gilt molding or picture frame measuring about eight by five feet and covered in front by a white scrim which by proper lighting produced the effect of a brilliantly illuminated portrait. It was possible to utilize here a large doorway as a setting which lent itself well to decoration as well as to practical operation; the same effect could be obtained on a platform or stage but would require a more elaborate installation.

CAST OF CHARACTERS AND PERSONNEL

Director, Dr. R. C. Derivaux.
Master of Ceremonies, Dr. Paul DeWitt.
Hippocrates, Dr. Lucius E. Burch.
Galen, Dr. N. S. Shofner.
Harvey, Dr. M. G. Buckner.
John Hunter, Dr. Robert Caldwell.
Jenner, Dr. D. C. Seward.
Laennec, Dr. Henry Douglass.
Ephraim MacDowell, Dr. C. S. McMurray.
Crawford W. Long, Dr. W. B. Anderson.
Pasteur, Dr. H. W. Gayden.
Lister, Dr. W. A. Bryan.
Robert Koch, Dr. Herman Spitz.
Gorgas, Dr. W. G. Kennon.

Costumes and accessories by Sam Bittner, Nashville, Tenn.

Electric effects, Herbrick & Lawrence, (Mr. J. P. Lawrence), Nashville, Tenn.

Master of Ceremonies: We are met tonight to again pay homage to the illustrious of our craft. Names now immortal shine like guiding beacons out of the dimness of the past to testify to the efforts and the achievements of those whose searches and labors for the pure light of truth have brought them a glory that is to endure for all time. Of such is the galaxy of the truly great.

---

*Produced and presented by a Committee of the Nashville Academy of Medicine and Davidson County Medical Society at the annual banquet of the Tennessee State Medical Association on April 9, 1930, and in connection with the celebration of its Centennial.

As is the history of a state or a nation, so is the history of medicine a saga of its distinguished sons, each adding to and extending the achievements of his predecessors, and carrying forward the torch of whatever light it has been the will of the gods to place within the grasp of mortals.

Medicine began with the earliest of human culture and at a time when all learning was in the hands of the priestly craft, Temple attendants combined the functions of priest, magician, astrologer and physician and the ills of humanity were ministered to in the temples and in the sacred groves. From the early Brahmin records, the cuneiform inscriptions of the ancient Assyrians and Chaldees, the books of the Hebrew sages and the papyri of Old Kingdom Egypt, come the writings of what was then medicine. In the early Egyptian theology, the healing art was a gift to men by the god Thoth whom the Greeks of Alexandria later knew by the name Hermes Trismegistus; among the Hellenes, medicine descended from Apollo through Aesculapius, with Hygeia and Panacea as its patronesses.

Dr. R. C. Derivaux
Director

Listen and perhaps thou mayest hear the voice of the first of the immortals—

Hippocrates: I was known to the ancient Greeks as Hippocrates and called by the philosopher Aristotle, "Great Physician." My father was Heraclides, a disciple of Aesculapius and himself a physician, and among my contemporaries were Sophocles, Socrates and Plato. Born five centuries before the coming of Christ, I lived and wrought among my people at the perihelion of ancient Greek culture. To me was it given to compile the knowledge and wisdom of the 1,500 years that had preceded my time. I learned and taught the use of the five senses in the art of diagnosis. Drugs I gave, but I forgot not to enjoin moderation in diet and habit and to commend the virtues of light and cleanliness and of exercise and rest. My surgery dealt especially with fractures and dislocations, though I taught also the diagnosis and operation for empyema. I knew the signs of tuberculosis, hysteria, apoplexy and many other diseases. My description of the spasms and distorted facies of tetanus, and of the anxious state in the severe fevers, bear my name. The names I gave to the three types of malaria are still in use today. The virtues and character essential to the practice of our art I taught my pupils as is testified in the Hippocratic oath. I wrote much. and of my many aphorisms this is most quoted: "Life is Short, and Art is Long; the Occasion Fleeting, Experience Fallacious, and Judgment Difficult." Thus does my memory live and so is my name respected.

Master of Ceremonies: Gone is the glory that was Greece. Although perished and impotent at home, superior Greek culture led in intellectual influence in medicine, as in every art and science, and endured into the early Christian era to enlighten the world. Great hospitals, a university and a library at Alexandria were exponents of its highest culture throughout the East and the Levant, and even at Imperial Rome itself. Greek thought was dominant. Foremost and of the greatest force was one whose star rose highest in his own day, and after death whose influence, like the hand stretched from the grave, held men for centuries.

Galen: I was Galen, greatest of the Greek physicians after Hippocrates and Father and Founder of Experimental Physiology. I practiced in Rome in the second century after Christ and soon attained eminence, but withdrew early to devote myself to travel, to study and to teaching. So great became my influence that it endured for almost fourteen centuries after my death.

My books in Anatomy, Physiology, Therapeutics and Pharmacy became authority and my name lives today in the term "Galenicals." I described the four classic symptoms of inflammations. I differentiated pneumonia from pleurisy. I was the first to describe aneurism and I recognized the different forms of phthisis, mentioning its infectious nature and proposing a full milk diet and climatotherapy in its treatment.

I performed the first experimental section of the spinal cord to produce paraplegia, produced aphonia by cutting the recurrent laryngeal nerve, described the cranial nerves and the sympathetic nervous system. I gave the first valid explanation of the mechanism of respiration, showed that the arteries contained blood, and demonstrated the motor power of the heart by showing that the blood pulsates between the heart and a ligated vessel but not beyond.

These contributions and others made me celebrated and constituted the only real knowledge of the physiology of the nervous respiratory and circulatory systems that medicine possessed for more than one thousand years. This is my claim to immortality.

Master of Ceremonies: After Galen . . . darkness. A few centuries of Arabic and Byzantine culture produced only a small number of outstanding personages of originality and daring who were bold enough to break from the dogmas of Galenic authority.

The middle ages were indeed dark. Dark because of ignorance and superstition, and because of the dominance of a powerful church and of a far-flung inquisitorial organization which so completely throttled scientific and philosophic advance that Galen, and with him the ancient errors, still held unyielding sway. Departure from the old teachings, new or free thought of whatsoever character was met with persecution, and the hand of the Inquisition fell upon medicine as in every other field of thought. Recall Copernicus, forced to recant his theory of planetary motion, Michael Servetus burned alive, and the life of Vesalius placed in jeopardy when his new anatomical plates were ready for publication.

The invention of printing, the liberation of the Bible to all men by its publication in common language, and the abandonment of Latin by Paracelsus, Pare, and others as the tongue of science, marked the dawn of a new era—a rebirth indeed, and the coming of a new light. With the Renaissance, came the beginnings of experimental biology. Mark the first of the immortal experimentors—

Dr. Paul DeWitt
Master of Ceremonies

Harvey: I was William Harvey. I was born in Folkstone, England, in the year 1578 while Elizabeth was queen. I was still in school at the time of the defeat of the Spanish Armada, and I received my degree as Doctor of Medicine from the University of Padua in 1602. At this time the authority of Galen was sacrosanct. Vesalius, a pupil of Sylvius of Paris, was among the first anatomists who dared to break from the teachings of Galen and brave the wrath of the then all-powerful Church.

Shortly thereafter Michael Servetus announced his discovery of the pulmonic circulation; this he published in a treatise on theology and his reward was a martyr's death at the stake as a heretic at the hands of the fanatical Calvin.

My studies of the uses of the heart and blood vessels began with the observation that the active part of the heart's motion was its systole and not its diastole as was taught in the Galenical doctrine. I saw that the arteries expanded as the heart contracted and that the great veins emptied their blood into the auricles in the moment of diastole. And so I began to think of the motion of the blood in a circle as it were, going out from the heart to the body in its several parts and returning because of the motion of the heart. And thus after much study and many experiments with living animals, did I learn the truth. These and other discoveries I taught in my lectures before the Royal College of Physicians, and published in my book in 1628. A busy and useful life ended, I passed on to my reward, happy in the thought that I had contributed my quota to the advancement of the science of medicine.

John Hunter: I was John Hunter. I was born in England in 1728 and was the youngest of eight children. Indifferent and negligent in my youth my life only began when I became associated with my brother William, ten years my senior, and whose reputation as a teacher of anatomy in London had already been made. I became fascinated by the intricacies of the human dissections which he allotted me as my task, and with long and patient labor prepared the specimens which earned me not only my brother's praise but ultimately became the great London museum which I trust has been a source of knowledge and inspiration to many. I established the fact of collateral circulation and thereby laid the foundation for the intelligent treatment of aneurysm. Before this, the only treatment for aneurysm was amputation. It is a satisfaction to know that I have been able to contribute this much to the relief of humanity and that my name is honored and remembered.

Jenner: I was Edward Jenner and was born in 1749. My forebears were of the clergy and as a youth, while I was inclined to social pleasures, I nevertheless began early to collect nests and fossils and to manifest an interest in the natural sciences. Later I was sent to Sodbury near Bristol to learn surgery and pharmacy under the preceptorship of Daniel Ludlow.

It was while working with Ludlow that I became interested in small-pox. I heard a country girl make the statement that she did not fear small-pox, that she could not have small-pox because she had had the cow-pox. It became my ambition to prove or disprove the accuracy of the maiden's statement. In this I was stimulated by John Hunter who set me a number of experiments in which to continue my researches.

I mingled with the cow-herds and investigated the different phases of the prevalent distemper which they called cow-pox. In the cow, it was mild, but in man it was virulent. One attack of the small-pox exhausted the susceptibility of the constitution to a second attack. If cow-pox were a benign form of small-pox, it seemed to me that by producing cow-pox, I should be able to immunize against small-pox.

I was criticized by my medical associates and was threatened with expulsion from my local medical society for discussing my experiments on every occasion. But remember that at this time about ten per cent of all our deaths were due to small-pox, that it spared neither the high nor the low, and that scarcely an individual lived who was spared the scourge and the marks of this dread disease.

My experiments were many. I finally found that the teats of the cow were subject to many kinds of eruptions, and that of these sores only certain ones afforded the secretions that gave protection against small-pox.

Sarah Nelmes, a dairy-maid, pricked herself with a thorn and this became infected with cow-pox while milking her

The "Immortals in Medicine" as they appeared in the pageant given at the annual banquet of the Tennessee State Medical Association at the Woodmont Country Club. Left to right: Hippocrates (Dr. Lucius E. Burch), Galen (Dr. Nat Shofner), William Harvey (Dr. Mat G. Buckner), John Hunter (Dr. Robert Caldwell), Edward Jenner (Dr. D. C. Seward), Lænnec (Dr. Henry L. Douglass).

master's kine. On the 14th day of May, 1796, I took matter from her hand and inoculated it into two superficial incisions in the arm of James Phipps, a healthy boy of eight. This was my first vaccination.

Two months later, I introduced matter from a case of virulent small-pox into this same boy's arm without the slightest effect, for Phipps had been vaccinated. For this achievement is mankind forever in my debt.

Laennec: I was Rene Theophile Hyacynthe Laennec, a native of Brittany, and was born in 1781. During the French Revolution I served as a regimental surgeon. Before I lived, little was known of the diagnosis and pathology of diseases of the chest. I worked long and diligently in the hospitals of Beaujon and Necker and had the good fortune to develop the stethoscope, evolving the idea from a piece of paper rolled into a cylinder. The invention of the stethoscope and my book dealing with the anatomic pathology of diseases of the chest and its diagnosis by means of auscultation and percussion are my contributions to medicine. I died in 1826 at the age of 45 years as a result of tuberculosis, but the short time in which I lived and worked was sufficient to immortalize my name.

McDowell: I was Ephraim McDowell, a country practitioner in the then frontier village of Danville, Kentucky. My life spanned the years from 1771 to 1830. At age 19, I began to read medicine, later finishing my medical education under that great teacher and surgeon, John Bell, of Edinburgh, the then Mecca of Medicine. It was while studying here that I became early impressed with the sad and hopeless fate of women afflicted with ovarian tumors.

Upon my return to Kentucky, I performed all of the operations of surgery in my day and many for stone. In 1809, I was consulted by a Mrs. Jane Todd Crawford, aged 47 years, who traveled sixty miles on horseback from Green County in search of relief from a very large ovarian tumor; the pommel of the saddle had made a deep indentation in her abdominal wall. Realizing that life held but little for her in this condition, she consented for me to attempt the removal of her tumor, though I explained to her that no person had ever survived such an operation. And so, on December 13, 1809, in my office at Danville, I was privileged to perform on Mrs. Crawford, the world's first ovariotomy, while this good woman repeated in Psalms to sustain her fortitude as anæsthesia was not then yet known. I tapped the sac, evacuated its contents and delivered the tumor. I then tied the pedicle with deerthong, leaving the ligature hanging out of the wound which was then closed around it. A mob awaited me without my door, with my life as a penalty should my patient die; it pleased God to allow Mrs. Crawford to live.

I performed thirteen ovariotomies with eight recoveries. When the success of my first few cases was reported in The Electic Review, I was ridiculed and called a falsifier by a London medical journal. My discovery was appropriated by another who hastened to attempt the operation and claim priority; his first nine cases all died; they had been performed in a hospital reeking with infection, whereas mine were done in the backwoods of Kentucky, away from the suppuration then rife in hospitals. Thus I earned the name of "Father of Ovariotomy," and established the beginnings of successful abdominal surgery.

Long: I was Crawford W. Long, of Danielsville, Georgia. I was born in 1815, graduated in medicine from the University of Pennsylvania in 1839, was buried in 1878, but I live and will live forever. Calories and Vitamines make men breathe and exist, but achievements make men live. In the winter of 1842, as a result of an accident in my laboratory, an attendant inhaled the fumes of sulphuric ether to the extent of partial anæsthesia and unconsciousness. From this circumstance, I conceived the idea of ether anæsthesia for surgery. In March, 1842, I removed a cyst from a man's neck without pain while the patient inhaled the fumes of ether. This was the first time in the history of the world that ether was employed as an anæsthetic. I continued to operate with ether anæsthesia, but while I made no written reports of my work, my achievement was vouched for by my colleagues. In Washington, D. C., there has been erected to my memory a monument of bronze; countless operations without pain and untold suffering prevented and relieved are my most enduring memorial.

Pasteur: I was Louis Pasteur. I was born in 1822 in the little village of Arbois in southern France. My father was a tanner, but I nevertheless had educational advantages and attained the degree of Bachelor of Letters and Bachelor of Sciences; many years later I had conferred upon me the honorary degree of Doctor of Medicine.

My scientific work began in the field of pure chemistry and at 26 I presented to the Academy of Science my first paper on Molecular Dissymmetry. I next proved that spontaneous generation was a myth and that fermentation is always due to a living process. Through this study I discovered the reasons for dextro- and levo-rotation, and separated lactic, butyric, acetic and alcoholic fermentation. In continuing my work on fermentation, I discovered the aerobic and anærobic characteristics of bacteria, and this led to the annihilation of the diseases of wine, beer and vinegar.

Later I discovered the organism of chicken cholera and prepared a vaccine which would prevent and cure it. I saved to France the silk industry by controlling the two diseases which were destroying it. I was the father of antigenic therapy and my work in hydrophobia is universally known. Finally, by application of my principles, the Listerian period of antiseptic surgery was inaugurated.

I affirmed nothing of which I was not absolutely sure. My coming into medicine was almost accidental, in fact it was at times almost resented as I remained what I originally purposed, a man of science and not a physician. But medicine and through

Left to right: Ephraim McDowell (DR. C. S. MCMURRAY), Crawford W. Long (DR. W. B. ANDERSON), Louis Pasteur (DR. HORACE GAYDEN), Joseph Lister (DR. W. A. BRYAN), Robert Koch (DR. HERMAN SPITZ), General William Gorgas (DR. W. G. KENNON).

it all humanity has honored me in acknowledging an everlasting gratitude.

Lister: I was Joseph Lister. I was born in 1827, obtained my Bachelor's degree and later studied medicine at the University College Medical School and Hospital at London. My first contact with hospital wards impressed me with the deadly complications of wounds—hospital gangrene, erysipelas, suppuration, septicæmia, pyæmia, and with the enormous mortality and the prolonged miserable morbidity. The wards smelled like charnel houses and the mortality of amputations was 65 per cent.

I decided to dedicate my life to finding the cause and the remedy. It was known that injuries without open wounds usually escaped complications and all surgeons believed them to be due to contact of the raw surfaces with atmospheric oxygen.

In 1865 I first heard of Pasteur's work on fermentation and its cause and I felt that bacteria, too, might be the cause of our surgical complications. In 1864 I had learned of the success had by the city of Carlisle in deodorizing sewage with carbolic acid, and that cattle grazing on pastures into which this sewage drained were no longer infested with entozoa. Knowing from the work of Pasteur that the odors were due to fermentation, and the fermentation to bacteria, I decided to try carbolic acid in solution as an antiseptic.

My first case, a compound fracture, was treated in March, 1865, and was a failure; my second, in August of the same year, a success. From that time, progress was rapid and complications practically disappeared from my wards, hospital gangrene entirely. Thus antisepsis was established as a proven scientific principle.

My greatest difficulty was to convince my conferees. The last country to be convinced was England, and in England, London, where the original determination to do this work was made.

One consequence of my success was my elevation to the peerage by my sovereign.

My real happiness lay in the realization of my life's ambition in conferring a great boon on humanity. I died in 1912 at the age of 85 years.

Koch: I was Robert Koch. A graduate of the medical school of Gottingen, I practiced medicine in a poor country district in Germany. Early impressed with the distress of my poor farmer patients who were losing their cattle and sheep from that dread disease, anthrax, it was my good fortune to be able to work out the complete life cycle of the bacterium that caused this terrible malady; this I reported in 1876. Thus was I able to prove that a given infectious disease is caused by a given germ and none other, and so doing became a pioneer in the field of the study of bacteriology and one of its fathers and founders.

My researches enabled me to introduce methods for obtaining bacteria in pure cultures, and in making dried preparations in which bacteria could be stained and photographed.

In 1882 I discovered the organism that causes tuberculosis and later developed a vaccine, tuberculin, which has been of help in diagnosis and treatment; I differentiated six kinds of traumatic infections and was able to show how these were carried from person to person. In 1890, I discovered the organism of Asiatic Cholera, and that of infections conjunctivitis. I also outlined the procedures by which these various diseases could be controlled. Other researches included studies of Sleeping Sickness, Surra, Blackwater Fever, Malaria, Typhoid Fever and other conditions.

In 1905 I was awarded the Nobel prize, one of my many honors and material rewards. My greatest reward is the knowledge that my many students are continuing in my path in search of truth and that they are diligent in this duty.

Gorgas: I was William Crawford Gorgas and though I am dead, my work lives. I have been called the Apostle of Preventive Medicine and what I did to merit this glorious title has been accomplished within the memory of all who hear me now. I had the faith and courage to base my life work upon the experiments in which Reed showed that Yellow Fever was transmitted from person to person through the bites of a mosquito and in that way only. By my efforts, the city of Havana was transformed from a plague spot to a resort with a death rate comparable to that of our most highly cultured cities and Yellow Fever reduced from the magnitude of a constantly recurring scourge to that of a medical curiosity. The construction of the Panama Canal stands as a monument to the application of the same principles as were used in Havana, and where the French failed, Americans triumphed because of our conquest of the diseases which had formerly earned for the American Tropics the name of the White Man's Grave. My memory is immortalized in many ways and places, but I am happy in the knowledge that the principles in which I believed have been vindicated and that it has been proven that it is within the power of man himself to dictate what his own health and that of his community or country are to be.

Master of Ceremonies: Medicine is still in the days of its childhood. Its swaddling clothes have been outgrown, but its continued growth, waxing more mature as the centuries succeed themselves, will bring changes as strange and as unpredictable as what we possess today would have appeared to our ancient forebears.

In our hands, and in the hands of others such as we, are held the traditions and trusts of what is yet to come. May the gods grant that in these sacred trusts we fail not, and that the torch of truth be borne steadily forward to bless mankind, relieve the distresses of humanity and to enlighten the world.

THE SURGERY OF UTERINE AND OVARIAN TUMORS: A RETROSPECT*

C. JEFF MILLER, M.D., F.A.C.S., New Orleans

THE HISTORY of the surgery of uterine and ovarian tumors is more than a record of successive advances in technique. It is more than a record of the development of gynecology as a specialty. It is more than a record of the development of abdominal surgery. I need not remind you that it was the gynecologist who first staked the claims of the surgeon to the territory within the peritoneum. The history of the surgery of pelvic tumors is all of these things, and more besides. It is, above all else, the record of innumerable acts of courage: the courage of women who dared to submit to untried manipulations upon their bodies, the courage of surgeons, who, with little knowledge, with no tools, with all the handicaps of a pre-anesthetic, pre-antiseptic, pre-aseptic age, with nothing to sustain them but the shining flame of their conviction and a passionate desire to relieve suffering, forged ahead, step by step, in the development of gynecologic surgery as it is today.

None of you, I am sure, who have seen that famous painting of Rembrandt's that hangs in The Hague can forget any of its details. You will remember the white flesh of the outstretched body, the eager face and delicate hands of the surgeon, and the intentness of the group of students. And above all you will remember the most striking and impressive part of that picture, its shadows, its equally sombre lights, and the intangible thing which, for lack of a better name, we call atmosphere. I am not the first to make the comparison between that picture and the setting of the first ovariotomy, in a little backwoods town of Kentucky, where intra-abdominal surgery had its birth.

It is a familiar story, but let me rehearse again some of its details. Ephraim McDowell was a Kentucky lad who completed his medical training in Edinburgh under the great John Bell, and who seems to have possessed the courage which Bell evidently lacked, in spite of his passionate conviction that women suffering with ovarian tumors could be relieved by surgery, need not submit to suffering and death as the inevitable consequences of their disease. He returned to Danville and he became a very expert surgeon, as surgeons went in those days. Then in 1809, fourteen years after he had begun to practise, he was consulted by a certain Mrs. Jane Todd Crawford, who had an enormous tumor, which was considered by some physicians, in those days of uncertain diagnosis, to be a pregnancy, chiefly, it would seem, because it inclined to one side. But McDowell recognized it for what it was, and although, as he said, he "had never seen so large a substance extracted nor heard of an attempt or success attending any operations such as this required," he gave "this unhappy woman information of her dangerous situation" and of his plan for her relief, and she consented to undergo the experiment.

For experiment it was in the sense that the operation had never been undertaken before, that the man who was to perform it was sailing uncharted seas. But he was well equipped for his task. He knew all that the medical science of the day could teach him of the subject, and he was a skilled anatomist. Indeed—and his example could be recommended to embryo surgeons today—before any major operation he always made it his business to rehearse the appropriate anatomy on the cadaver.

So Mrs. Crawford rode to Danville, over sixty miles of rough road, with her tumor resting on the pommel of her saddle, and in a little out-building, without anesthesia, with few instruments, with none of the paraphernalia of surgery as we conceive it,

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

Ephraim McDowell took her life and his professional reputation into his hands and placed them both in jeopardy. His only assistant was the nephew associated with him in practice, who had opposed the undertaking by every means in his power, and who finally consented to assist only on condition that if it failed, he should not share the responsibility, though if it succeeded he was to partake of the glory. How successful the operation was the whole world knows. The removal of the seven and a half pound sac and of the fifteen pounds of contained fluid took only twenty-five minutes; five days afterwards, when McDowell visited his patient, she was making her own bed; in twenty-five days she was discharged; and she lived for thirty years, a witness to what skill and courage can achieve in the face of uncounted obstacles.

After McDowell had done three cases, all of them successful, he wrote the account of his experience, thinking it "due both to his own reputation and to suffering humanity to throw all the light he could upon diseased ovaries." But Physick, the Father of American Surgery, to whom the paper was offered, declined to traffic with it, and although it was later accepted for publication in the *Electic Review*, it attracted so little attention that in 1821 Nathan Smith performed the operation in New Haven thinking it entirely original. These were the dark ages of medicine, if you will, but the man who made what Mumford describes as "America's greatest gift to surgery," was actuated by very correct principles. He refrained from publishing a series of a single case, and he realized, what many more perfectly trained surgeons of today do not, that surgery is a thing of the heart and mind as well as of the fingers: to the end of his life it was his "most ardent wish that this operation might remain to the mechanical surgeon forever incomprehensible."

Prior to the introduction of ovariotomy the only recourse in ovarian tumors, aside from empirical medical treatment, was tapping, occasionally through the rectum, more often through the vagina, most frequently through the abdominal wall. Spencer Wells on one occasion removed 115 pints of fluid from a patient—without even wetting the linen of the bed or of the patient, he proudly records—and the removal of thirty, forty and fifty pints was no unusual thing. Martineau tells of a patient tapped eighty times within twenty-five years, and the two tombstones Lawson Tait describes are equally noteworthy. One is in Bunhill Fields, to the memory of Dame Mary Page, who died at fifty-six, having been tapped sixty-six times in sixty-seven months, and having had taken away 240 gallons of water, without ever repining at her case or ever fearing the operation. The other is in Hampshire, to the memory of Mary Dawkins, who "reposed in Christ, aged ninety years, having been tapped forty-six times." Truly there was need for relief in such a distressing and such an inevitably fatal disease. For the case of Mary Dawkins the nonegenarian is most unusual.

Late in the seventeenth century Theodor Schorkoff expressed the belief that the extirpation of dropsical ovaries would lead to permanent cure if the operation were less cruel and hazardous, and in the following century half a dozen others, including both the Hunters, made the same proposition. With John Bell, as we have said, it was a firm conviction, though he lacked the courage to act upon it and it remained for McDowell to perform the first deliberate ovariotomy. As a matter of record we might add that Robert Houstoun of Glascow in 1701 apparently opened an ovarian cyst by accident, withdrawing through a four-inch incision nine quarts of fluid and a structure which was probably the lining membrane.

McDowell did at least thirteen cases with at least eight recoveries, though the records are not accurate and there may have been more. Then came Nathan Smith and other isolated surgeons, including one Lizars of Edinburgh, who, so the story goes, after operating on a woman for a supposed ovarian cyst and finding that she had nothing worse than obesity, published the story of McDowell's cases to justify himself for having undertaken such an astonishing performance. It was not until the Atlees began their work in America and Clay of Manchester published his cases in England that the operation became a systematic procedure based on definite indications. Spencer Wells' report in 1872 of 500 consecutive cases operated on in approximately fifteen years set it on a firm footing and there it has remained ever since.

Some of the early indications for operation have a curious ring to modern ears. Wells states that surgery must not be undertaken until the patient suffers pain, is annoyed with pressure, or has her functions fail of performance, although a projected marriage, a necessary voyage or family circumstances will sometimes justify earlier interference. Keith is of the opinion that the tumor must be large and the patient have suffered a good deal, and both he and Wells agree that a woman accustomed to illness is a better subject for operation than a strong, healthy female. Dunlap would not "desire to interfere" with growths under twenty pounds. In fact, it was almost at the turn of the century that the modern indication, the mere presence of an ovarian tumor, was considered sufficient to justify operation. In the early days the presence of adhesions was regarded as a definite contra-indication to operation, and to be certain that they were not present a very sure method of producing them was employed, the insertion of needles into the cyst, the respiratory movements of the abdominal wall being taken as diagnostic. Even in Spencer Wells' time it was not fully realized that repeated tapping was likely to produce them; he himself did not believe that such a procedure added more than two per cent to the risk, which again to modern ears has a rather casual sound.

The conditions favorable to operation, as outlined by Sutton in 1882, include among other things "favoring climatic influences," and I think it is he who would prefer to operate in March with a south wind rather than in June with an east wind. Skene considers preoperative bathing dangerous unless the patient is used to it—the implication is plainly that she is not—and advises, in order to avoid the dangers of cold and exhaustion, that she bathe several days beforehand and then with great care. There is some difference of opinion as to whether morning or afternoon is the better time for surgery; the afternoon seems to have the better of the argument, one writer advancing in its favor that the patient can have breakfast as usual with the family.

A discussion of the technique of ovariotomy is little more than a discussion of the treatment of the pedicle. McDowell and Nathan Smith both left it within the abdomen, although the former brought his ligatures out through an opening in the wound. Thereafter every conceivable thing was done with it. As one writer says, it was tied entire and in sections, twisted off, burned off, crushed off, cut square off, cut off in flaps, left inside, left outside, and made to slough off. In the early eighties Sutton pointed out the curious fact that Wells and Keith, the two greatest living exponents of ovariotomy, followed diametrically opposite methods in the management of the stump, although the same man, Stilling, had suggested both the extraperitoneal clamp method of Wells and the intraperitoneal cautery method of Keith. Of course, in these modern days of absorbable sutures and aseptic technique the discussion has long since ceased to rage.

The early mortality of ovariotomy was not encouraging, and even Spencer Wells had a death rate of 25 per cent. But the condemnation of the operation seemed to be based on its principles rather than on any lack of success. Frank skepticism, to express it quite mildly, was the general tenor of the early reviews. "It is an operation," says one editor, "which calls for neither the knowledge of the anatomist nor the skill of the surgeon, and which is so fearful in its nature, often so immediately fatal in its results, that whenever it is performed a fundamental principle of medical morality is outraged." Dunlap's first case report was refused by the editor of the *Cincinnati*

Medical Journal on the ground that its publication would encourage an unjustifiable and murderous operation. The Atlees were publicly spoken of as butchers and murderers, and their patients were warned against them by other members of the profession, one of whom opened a lecture to students—on an entirely dissimilar subject—by recounting the sad history of "a respectable lady" who came from New York to Philadelphia for ovariotomy and who returned a corpse. Meigs, who "frankly detested all abdominal surgery save such as was warranted by imminent death," considered ovariotomy unjustified even when successful and would have it prevented by law. Robert Lee, the outstanding obstetrician of London, watched for a fatal case there that he might cause the surgeon to be legally prosecuted. Truly these pioneers must have had a mighty faith, must have believed in their cause as implicitly as did Washington Atlee, who said, "If, when relief can be afforded in a horrible and fatal disease, we are unwilling to hazard our fame or take responsibility in consequence of danger, then indeed we prostitute a high and holy office, fail to exercise it purely, and will have to give an account of it hereafter."

The surgery of fibroids produced rather less of a chorus of condemnation, perhaps because ovariotomy had paved the way, but even at that there was much said. Keith, the great ovariotomist, could "hardly imagine that any symptoms would justify the performance of a dangerous operation like hysterectomy for a mere fibroid." Gaillard Thomas believed that here was "no more dangerous gynecologist than he who goes forth determined to extirpate the uterus for solid tumors," and as late as 1886 we find H. P. C. Wilson saying, "I shrink and have a feeling of terror come over me when I find myself obliged to do a hysterectomy."

Fibroids in the ancient days of which we are writing were not considered incompatible with life, as in most instances they are not, and there was a rather widespread notion—which has not entirely disappeared today—that they atrophy after the menopause. Many methods were employed in their treatment: medication of various sorts, including iodine, which could be given internally if that were not too exhausting; ergot, sometimes as many as 200 injections; douching; pessaries; tamponade; curettage; incision of the capsule, on the principle of kidney decapsulation; and mineral and mud baths. Meigs, the opponent of surgery, considered three baths a week helpful if not too exhausting. Last of the non-surgical measures was the electric treatment of Apostoli, uncertain in its results and particularly dangerous in those cases in which the tube could not be introduced into the tumor through the cervix and was inserted via the vaginal or abdominal wall.

Extrauterine surgical procedures were done almost into the present century, the chief of them being ligation of the uterine arteries, the success of which was variable, and bilateral oophorectomy. This procedure, a barbarous one to modern notions, was fostered by Battey, Hegar and Lawson Tait, and its uncertain results and its mortality of 4 or 5 per cent were alike regarded with complacency.

In 1853, the year in which the first deliberate hysterectomy for uterine fibroids was performed, W. L. Atlee won the prize of the American Medical Association for a paper "On the treatment of uterine fibroids hitherto considered beyond the resources of surgical art." In it he gives an account of fourteen cases in which uterine fibroids of varying size were removed by vaginal traction and morcellation, sometimes in as many as twelve stages. Five of the patients died, and as we read the account of the prolonged, violent manipulations by which the tumors were dragged from their uterine attachments, we rather wonder that they did not all perish. One woman died from peritonitis, which, in those pre-Pasteur, pre-Lister days, was set down as due to air and exposure, an open window being necessary because of the fetid odor from the tumor. Another died from erysipelas, and it is an interesting fact, says the author, that he had that very week operated on a lady with the same condition, and that the surgeon who assisted him with the first operation had two cases of the same disease develop shortly in his own practice.

Vaginal morcellation as Atlee describes it was carried to perfection in America by Sims, Emmet and Thomas, and abroad chiefly by Chrobak. It was admittedly applicable only to small or moderate sized tumors, preferably with a pedicle attachment. but its use was widespread well up to the turn of the century, it being done in later years under constant irrigation in order to preserve asepsis. Today, of course, it has a very limited field.

Vaginal hysterectomy seems to have been done originally for cancer of the cervix, in the first quarter of the nineteenth century, but for some reason, in spite of the penchant of the early surgeons for doing everything they could through the vagina, it was apparently only an occasional performance for many years. The results were evidently quite good; in 1894, in 388 collected cases there were but eight deaths, which might be attributed to the fact that even in those days it was realized as it is today that it is a procedure applicable only to tumors of moderate size, and that even devices for reducing the size of the uterus do not widen its field very materially.

Myomectomy, first done by W. L. Atlee about 1844, seems at first blush to be a simple and logical operation, but it likewise seems to have been most illogically handled. Baldy in 1892 stated that it was an operation of the past, which could never again come into comparison with hysterectomy. Dudley a few years earlier had devised a technique for marsupialization of the tumor cavity after myomectomy, in violation of all surgical principles as we understand them, and a fearful hazard in future pregnancies, although the latter must have been unlikely under his system of removing the appendages on any indication or none at all. They should be removed, he pointed out, if they themselves were diseased, if there were other growths in the uterus not amenable to myomectomy, or if the uterus were so damaged during operation as to be incapable of performing its functions. All of which indications we would today regard as contraindications to myomectomy.

The early mortality was not encouraging. Martin of Germany was its chief advocate, yet his general mortality was 11.5 per cent, and when the cavity was opened it was 33.3 per cent. That situation continued for many years. As late as 1909 Kelly and Cullen reported comparative series in which the mortality for myomectomy was definitely higher than the mortality for hysterectomy. Today, however, large series of cases have been reported with a mortality of less than 1 per cent, and thinking gynecologists are coming more and more to believe that, other things being equal, any operation which conserves a woman's functional sexual life is to be preferred to an operation which destroys it.

The first deliberate hysterectomy for fibroids was undertaken, as we have said, in 1853, and in it, as in ovariotomy, the question was chiefly what to do with the stump. Every possible method of handling it was proposed, extraperitoneal, intraperitoneal, retroperitoneal and vaginal, many of the procedures being alike unsurgical in principle and difficult of performance. The most popular method was to fasten it in the wound by Koeberle's serre noeud and permit it to slough off, with resulting sinus and hernia formation, if the patient were so fortunate as not to lose her life from peritonitis and other infections. Small wonder, as many writers have pointed out, that the complete operation with all of its risks was devised in desperation as the easiest way out of a difficult situation.

It would not be possible to discuss in detail the various steps by which hysterectomy has become what it is today, perhaps the simplest and safest of all major gynecologic procedures. There are many notable names in the list, of which at least three must be mentioned: Stimson, who suggested preliminary ligation of the ovarian and uterine vessels; Baer, who suggested the omission of cervical ligatures; and Howard Kelly, happily still among us, who devised the technique of bisection, as well as the right to left and left to right technique, which have put even the largest tumors within the field of surgery. Today hysterectomy is a standardized operation which can be performed with minimum shock and blood loss, and in which, in large series of cases from single surgeons and well organized clinics, the mortality does not run over 1 per cent, though of course it is regrettably higher in miscellaneous series of cases.

Medical societies in the early days of hysterectomy quarreled fiercely as to when it should be performed. There was a general feeling that less drastic measures—among which our forefathers included oophorectomy—should be tried before hysterectomy was considered, and there was also a general feeling that the tumor must in some manner menace life or health to justify such radical surgery. In short, as some writer says firmly, operation upon a well woman was unthinkable. Lusk, though he grants that it is only a little thing, considered a woman's objection to the abdominal cicatrix as one of the arguments against hysterectomy, and Sutton approved of waiting for the uterus to become very large, since an enlarged pedicle was absolutely necessary to success.

Times does not permit the consideration of the surgery of cancer of the cervix, which developed from the simple amputation suggested by Osiander and others to the radical operation devised by Reis, Clark and Wertheim, though I might point out that the chain of events parallels step for step the progressive comprehension of the pathology of the disease. Surgery can go no further in the battle against this "Captain of the Men of Death," and the problem today is not further improvement of technique but rather a weighing of the relative claims of surgery and irradiation, with a judicious selection of the cases to be treated by each. Times does not permit me, either, to discuss the use of irradiation as a substitute for surgery in the management of certain uterine fibroids, and I have not attempted to treat the wide and difficult field of intraligamentary tumors, or the far-reaching effect of Cullen's and Sampson's work on endometrial tumors.

I have, in short, tried merely to make you see the development of the surgery of uterine and ovarian tumors as something more than a succession of dates and events. I have wanted you to picture for yourselves the contrast between that little out-building in Danville where McDowell did the first ovariotomy and the shining tile and nickel of the modern operating room, the paraphernalia of instruments and suture material, the skilled anesthetist and assistants, the highly trained nurses, the surgeon with his knowledge of anatomy—though I doubt whether that is any more perfect now than it was then—his knowledge of bacteriology, of pathology, of the details of surgical technique.

A surgeon's life is a constant exercise of courage. It cannot be otherwise if he is true to his high calling. But the courage of the surgeon of today is as nought compared with the courage of these pioneers of whom I have spoken to you. They must have been stout of heart indeed to steel themselves against the sight of the agonies they had to inflict, to face recurring disappointments, to bear misunderstanding and condemnation and obloquy, and to continue to hold fast to their faith that what they were doing was right.

"Excellent courage our fathers bore,
Excellent heart had our fathers of old,"

and because of their courage and their high hearts modern gynecologic surgery stands where it does today.

BIBLIOGRAPHY

Allbutt, T. C., and Playfair, W. S. System of Gynecology by Many Writers. Macmillan and Co., Ltd., New York, 1896.

Atlee, W. L. The Surgical Treatment of Certain Fibrous Tumors of the Uterus, Hitherto Considered Beyond the Resources of Art. T. K. and P. G. Collins, Philadelphia, 1853.

Baer, B. F. Supravaginal Hysterectomy Without Ligature of the Cervix in the Operation for Uterine Fibroids. A New Method. Trans. Amer. Gynec. Soc., 17:236-255, 1892.

Drysdale, T. N. In Memoriam: Washington Lemuel Atlee. Ibid. 3:372-396, 1878.

Garrigues, H. J. A Text-Book of the Diseases of Women. W. B. Saunders, Philadelphia, 1894.

Meigs, C. D. Woman: Her Diseases and Remedies. A Series of Letters to His Class. Sec. Ed., Lean and Blanchard, Philadelphia, 1851.

Mumford, J. G. A Narrative of Medicine in America. J. B. Lippincott Co., Philadelphia and London, 1903.

Skene, A. J. C. Treatise on the Diseases of Women. D. Appleton and Co., New York, 1898.

Sutton, R. S. Some Remarks on Ovariotomy With Special Reference to the Treatment of the Pedicle. Trans. Amer. Gynec. Soc., 7:119-130, 1882.

Tait, L. Diseases of Women and Abdominal Surgery. Lea Bros. and Co., Philadelphia, 1889.

Wells, T. S. Diseases of the Ovaries, Their Diagnosis and Treatment. D. Appleton and Co., New York, 1873.

OUTSTANDING ACHIEVEMENTS IN OBSTETRIC PRACTICE IN THE PAST 100 YEARS*

JOHN OSBORN POLAK, M.D.; SC.; F.A.C.S.; F.R.A.M. (Dublin), Brooklyn, New York

IT IS NEEDLESS for me to tell you that during the past hundred years great progress has been made in medicine, surgery and obstetrics. The nineteenth and twentieth centuries have been years of achievement. Modern life has been revolutionized by the telegraph, the telephone, the incandescent light, the radio, television and the many uses to which electricity has been applied. Science has built bridges, harnessed rivers, supplied new modes of transportation, eliminated time-consuming procedures, fabricated ships and machinery—so there is little left for the individual to do except press a button and see the works go round. All this has been heralded to the world; but the men in medicine have done even *greater things* without the plaudits of the *populace* and *without material recompense.*

Preventive medicine has made the world a safer place to live in; by sanitation, hygiene and vaccines it has blotted out epidemics and nutritional diseases. To whom is this credit due?—to the scientist working upon research problems in his laboratory, or to the clinician, the observer and exponent of the art of medicine? Until recently the general practitioner has been the mainstay of community life; he has been the physician, health officer, surgeon, pediatrist, obstetrician—and above all, the confidante and counselor of his people. His observations and deductions were founded upon his clinical study of the picture of disease supplemented by necropsy findings which, in turn, served to interpret and explain the symptomatology. This knowledge was brought back to the bedside and again applied for the practical benefit of the patient. Such was the method of practice and instruction 50 or 100 years ago, and it was this method which has placed modern medicine where it is today. The entry of the science of medicine (laboratory methods) into the field occupied in the main by the art of medicine has brought about a revolution which threatens the basic principles of practice. There will always be a place for both art and science, but they must be interdependent. Fortunately, the art of practice has and always will take a major part in obstetrics—for, it is yet many years before babies will be produced in the biological laboratory. Childbirth was originally intended to be a physiological process, but as a result of civilization, intercurrent diseases and unassorted marriage, it has become pathological.

Up to about the middle of the nineteenth century (1850) most of the advancements in medicine were made by the French, but with the publication of Virchow's Cellular Pathology in 1858, German medicine began its ascendency. This work by Virchow, however important, was antedated by the epoch making clinical discovery of Semmelweis. The suggestion of the contagiousness of puerperal fever by Holmes in 1843, the discovery of anesthesia by Crawford (1842) and Morton (1847) and its application to surgery and obstetrics by Simpson (1847), together with the development of antiseptic surgery by Lister in 1867, were the special achievements of the Anglo-Saxon race. It is difficult for us who have the advantage of well equipped hospitals and laboratories, tiled and lighted labor rooms, competent assistants and nurses, trained in perfect aseptic technique; working as we do with complete and specially selected anesthesia, to conceive what labor and its complications meant to the woman and the practitioner of years ago. Take, for instance, *the question of infection*—8 to 10 out of every 100 women died from infection in hospital clinics. It was far safer to have a baby at home without attendance than to be attended by a physician or midwife in a university clinic.

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

On February 13, 1843, Oliver Wendell Holmes read before the Society for Medical Improvement in Boston his paper on the Contagiousness of Puerperal Fever, in which he stated that women in childbirth should never be attended by physicians who had been conducting post mortem examinations or caring for cases of puerperal fever, scarlet fever or erysipelas. He positively stated that these diseases could be conveyed from patient to patient and that washing the hands in a solution of chloride of lime and changing the clothing were preventive measures. As usual, with any new idea, his competitors opposed his theory and criticized his practice. Hodge and Meigs in Philadelphia were particularly violent in their attacks, but Holmes, convinced of the correctness of his observations, returned to the firing line and in 1855 presented and published his monograph on Puerperal Fever as a Private Pestilence. In this essay he refers to one (Senderen) evidently Semmelweis, who concurs in his beliefs. This Semmelweis was assistant to Rokitansky in the first obstetric ward of the Allgemeines Kraukenhaus in Vienna. This ward was the one in which all of the students received their instruction—it had such a high puerperal mortality rate (13.8%) that the women of Vienna begged not to be taken there, but to be permitted to be confined by midwives at home. He contrasted this high mortality rate with that of the second or midwife ward, which was about 2%, where great attention was paid by the midwives to personal cleanliness. Impressed by these figures, Semmelweis made careful autopsy studies of all the puerpera dying of sepsis and became familiar with the "dead house" picture. In 1847, Kallotschka, another of Rokitansky's assistants, died of a dissection room wound. Semmelweis, who was present at the necropsy, noted that the pathology found was similar to that of the unfortunate puerpera who died in the first ward. This convinced him that it was the students coming from the dissection room to the lying-in wards who were the carriers of infection. He then instituted precautions of hand scrubbing with chloride of lime, change of clothing and other protective measures. His mortality dropped from 13.8% to 1.3%. Naturally, these innovations stimulated opposition from Braun and Scanzoni, the orthodox obstetricians of this time. Their criticism was so maligning that it caused him to leave Vienna and accept the post of professor of obstetrics at Budapest. While in Budapest he published his immortal thesis on the Cause, Concept and Prophylaxis of Puerperal Fever.

In this country as late as 1885, Henry J. Garrigues revolutionized the high obstetric mortality at the City Hospital on Blackwells Island. Women who were sent to the Island for childbirth belonged to a dissolute class. The nurses were inefficient and careless and the resident staff unsupervised—with the result that from 6 to 10 of every 100 women confined died of sepsis. Garrigues had the vulva shaved, scrubbed and bathed with bichloride solution; vaginal examinations were limited or omitted, and when made, done with the scrubbed hand after immersion in bichloride solution. After the labor was completed the vulva was washed with the mercuric solution and sealed with a wet *bichloride occlusion pad* which was changed after each urination or defecation—the effect was dramatic; the mortality dropped to less than 1%.

After Semmelweis the most prominent obstetricians of modern times were Simpson Crede, Braxton Hicks, Sanger, Doderlein Stropnoff, Tweedy, and our own American teachers, in which Williams, DeLee, Jewett, Craigin and Hirst make a group of which any country might be proud.

Due to the thought and courageousness of Sir James Y. Simpson, anesthesia in obstetrics has become a world-wide saver of human energy. Soon after the discovery of the anesthetic effect of ether in 1847, Simpson began to use it as an anesthetic in labor. He found, however, that because of its nauseous odor and its irritating effect upon the mucous membranes, that while it relieved pain, its use was followed by vomiting and an excessive secretion of mucous. Furthermore, the stage of excitement which was induced was in some cases difficult to handle. After using it for several years he substituted chloroform in the second stage of labor, but it was not until after his appointment as physician in Scotland to her majesty Queen Victoria, that his method of chloroform "a la reign" was accepted in obstetric practice. Before finally substituting chloroform, Simpson with a group of his coteries made numberless clinical experiments upon themselves in the old dining room in the basement of his home on George Street in Edinburgh. Sitting around the table, after discussing the relative merits and the physiological action of ether and chloroform, they would anæsthetize one another with these drugs. Simpson found that complete analgesia could be obtained by ten full inhalations of chloroform vapor, and that twenty would produce anæsthesia. This introduction of anæsthesia into obstetrics has opened a field to the newer anæsthetics claimed to be less poisonous than chloroform and those which have selective action on certain areas producing varying degrees of analgesia and anæsthesia. Ether, Gas-Oxygen, Ethylene, the A. C. E. mixture, all have their advocates. More recently Oil-Ether by the rectum, spinal anæsthesia, perineal block, Caudal injections and the intravenous use of Amytol have had enthusiastic support. The fact that I wish to bring out is, that through the introduction of anæsthesia, whether it be local or general, childbirth has been relieved of much of its pain and the physical and mental energies of the patient conserved. The use of anæsthesia is now generally admitted as good practice—its abuse is what is open to criticism.

Carl Sigmund Franz Crede, Director of the obstetric and gynecological wards at Charite in Berlin, introduced two outstanding measures of great value to obstetric practice: (1) The development in 1854 of a method for the removal of the placenta by external manual expression; (2) In 1884, the prevention of infantile gonorrheal conjunctivitis by the instillation of a solution of silver nitrate into the eyes of the new-born child. This latter discovery has reduced the incidence of blindness from this cause from 28.2% to 9.1%. These two contributions have placed Crede's name in the foreguard of the Annals of Obstetrics.

Expression of the placenta as described by Crede is not the procedure as taught in our medical schools today. Crede's procedure of manual expression, grasping the uterus with the fingers behind and the thumb in front, and squeezing it at the acme of the pain, was used to separate as well as to express the placenta. The modified Crede as taught today, presupposes spontaneous separation.

The next outstanding achievement in obstetrics was accomplished by John Braxton Hicks, a London obstetrician, who, in 1863 developed podalic version by combined external and internal manipulation. Braxton Hicks popularized his method which is used today in placenta prævia where podalic version is done before the cervix is sufficiently dilated to admit more than two fingers; to bring the breech into the lower segment of the uterus to act as a conical tampon against the placenta and the placental site.

Following close upon this improvement in the technique of version comes the epoch making discovery of Sir Joseph Lister, who introduced antisepsis into surgery and obstetrics—for, although antiseptics and even asepsis had been employed in obstetrics prior to the time of Lister, the principle did not begin to take hold until the surgeon and obstetrician alike began to cleanse their hands with carbolic and bichloride solutions. It is due to this great development that our present mortality, too high though it may be, has been reduced to approximately one-half of one per cent. Every great technical discovery costs life, so, with the introduction of antiseptics, the obstetrician became bolder because of the security which was supposed to be had from antisepsis and obstetric operations and intrauterine manipulation were more frequently employed—and with a cost. Gradually the pendulum has swung and less and less interference is being done.

Caesarean Section: Caesarean section on the dead woman had been the practice for ages. It was probably employed by the early Egyptians and the operation is frequently referred to in the myths and folklore of the early European races. It is said that Dionysus was cut from the dead Semele; the Lex Regia of Numa Compilius, 715 B. C., expressly commands the removal of the child before burial of its mother. Section on the living is of more recent date, though it is more than possible that it was also performed by earlier peoples, for Felkin, during his explorations in the heart of Uganda, witnessed a Caesarean section performed by a native, the operator a specialist, who washed his hands and the operative field with banana wine—the patient being drunk with the same liquid. A quick incision opened the uterus and after delivering the child, cutting the cord and removing the placenta, the cervix was dilated from above, the uterus massaged and compressed, the peritoneal cavity cleansed by raising the woman and allowing the fluid leakage to escape; the abdominal wound closed by pin and figure of eight sutures, and dressed with a paste of crushed herbs. The temperature never rose above 101, and the wound healed in eleven days. It is evident that these savages have been doing this operation for hundreds of years, to have developed such a detailed and successful technique.

Jacob Nufer, a Swiss swine gelder, in 1500, is credited with having successfully operated on his own wife—whether this was a Caesarean or a celiotomy for an abdominal pregnancy is not settled in history. The first authentic operation of which we have record was done by Trautman of Wittenberg in 1610, on a case of hernia of the gravid uterus. The mortality of Caesarean up to the late seventies was very great, reaching from 70 to 80 per cent; so in 1877 Porro, of Pavia, to avoid the dangers of hemorrhage and infection from leakage of the lochia, advised supravaginal amputation of the uterus and extraperitoneal treatment of the stump after the child was delivered. But it was Sanger, in 1882, who, by devising an efficient uterine suture, developed our modern classical Caesarean section. The essentials of the Sanger operation were: (1) A median abdominal incision; (2) a median uterine incision with or without eventration of the uterus; (3) the use of a rubber ligature around the cervix to stop hemorrhage; (4) the resection of a strip of uterine muscular tissue under the peritoneum and, (5) the introduction of eight or ten sero-muscular sutures of silver wire avoiding the decidua, to close the uterine wound. These wire sutures were buried by fine silk seroserous sutures introduced as a Lembert and the uterus allowed to drop back into the abdominal cavity and drain itself by uterine contraction. All of the improvements in technique which are used today, incorporate the principles laid down by Sanger in his memorable article.

The reintroduction of symphysiotomy and hebosteotomy by Spinelli, in Italy and France in 1891, and in this country by Jewett in the same year, was received with considerable enthusiasm. It had long been shown that Caesarean late in labor, after the waters had drained away and attempts had been made with forceps, carried with it a mortality of nearly 30 per cent. It was natural, therefore, that an infravaginal procedure which assured the delivery of a living child, with a mortality of less than 5 per cent, should have general support among expert obstetric operators. It is to Dœderline and Zweibel, however, that the credit of perfecting the technique should be ascribed. In 1904, Dœderline did a large number of these operations with a mortality of about 1 per cent. However, as is natural with all surgical procedures, it was done by both the competent and incompetent and the operation was abused—many fistulæ resulted and a few women became permanently invalided from injuries to the pelvic girdle. The procedure has gradually fallen into disrepute.

In 1906, Frank revived the older extraperitoneal section which had been suggested by Joerge in 1809 and done by Ritgen in 1821, and by Physick of Philadelphia in 1824. T. Gaillord Thomas introduced this operation in New York in 1870 and called it gastroelytrotomy. The technique consisted in making an incision through skin, fat and fascia, above and parallel to Poupart's ligament, and by blunt dissection under the peritoneum exposing the cervix and vagina which were incised, and the child delivered through the flank.

Latzko improved the technique of this procedure and it is used today with considerable success in neglected cases which are potentially infected. Beck, in 1916, introduced his two-flap operation which has been popularized by DeLee and spoken of by him as tracheloelytrotomy. The low section under local anesthesia has come to stay. It has the advantage over the classical procedure, in that it can be done late in labor without materially increasing the mortality. It also has the advantage of being followed by fewer ruptures and fewer intraabdominal complications.

The outstanding advances which have been made in the last two decades are:

(1) The general adoption of prenatal care,

(2) The development of the conservative treatment of eclampsia,

(3) The management of infected incomplete abortions, and

(4) The acceptance of a rational therapy in the treatment of puerperal infection.

Prenatal care saves both mothers and babies. Antenatal attention has diminished the occurrence of toxemic convulsions by teaching us the value of treatment in pregnancy toxemias and educating the public and the profession alike, in the danger signals of impending trouble. It has reduced the number of stillbirths by the recognition of toxemia and lues, and by determining before delivery the relative size of the child and pelvis, and the presence of malposition has forewarned us in pelvic contraction, and so made it possible to resort to delivery by aseptic surgical methods before the woman is exhausted. Prenatal care is particularly valuable when followed by intelligent and consecutive intranatal attention. Only by this succession are its full benefits attained.

The conservative treatment of eclampsia is now generally accepted, for while we must admit that the cause of eclampsia is still undetermined, we know that the living child in utero, is the active excitor of the toxemia and this condition occurs in no other state except that of pregnancy. Furthermore, we have learned that the toxemic patient is a bad surgical risk. She does not take anesthetic well, is subject to shock, more liable to hemorrhage and infection, and because of the edema her wound heals poorly—hence, the Tweedy and Strogonoff eliminative and sedative treatment to which Harding, Titus and Watson have added intravenous glucose and saline, has general acceptance and by its use the mortality has been reduced from 25 to 5 per cent.

In 1907, the late Thomas Watkins called attention to the conservative management of infected abortions. We now know that the febrile abortion with its undelivered contents presents a serious proposition. The indications are clean cut, namely: control of hemorrhage and evacuation of the uterus—but the latter becomes a most serious matter in the presence of infection, therefore, at the present time the following plan of management is generally accepted. Given an infected incomplete abortion with moderate hemorrhage, the vulva and vagina are prepared antiseptically, the bleeding controlled and the vulva packed with mercurochrome soaked gauze. The patient is then placed in the Fowler position with an ice bag over the hypogastrium, and pituitary extract administered hypodermically. In the course of three or four days the patient sensitizes herself to the infected uterine content by the development of a leucocytic wall which acts a barrier against the invading bacteria. The temperature falls, the leucocyte count decreases, the young polymorphonuclear cells increase and blood sedimentation time rises. Not until these four evidences of resistance become apparent is it advisable to enter the interior of the uterus. Then the question arises, how shall the uterus be emptied? This depends upon the period of gestation and the amount of cervical dilatation. Taussig's rule helps this decision: (a) before the eighth week the curet; (b) from the eighth to the fourteenth week, finger and forceps; (c) after placentation the fingers.

The treatment of puerperal infection has been revolutionized by a better understanding of the actual pathology which takes place in the puerperal wound, adjacent lymphatics and veins. Women recover from infection by producing a local or a general resistance to the invading bacteria. The fundamental basis of treatment is firm contraction and retraction of the uterus and postural drainage. By these physiological acts, the woman protects herself against the bacterial invasion, for the firmer the contraction, the more perfect is the development of the leucocytic wall and protective zone. *Infection destroys red blood cells,* consequently, small repeated blood transfusions given at three or four-day intervals is accepted as the greatest supportive measure. The interior of the uterus is a large puerperal wound which is capable of sterilizing itself when not interfered with, but when the bacteria extend into the surrounding tissues producing parametritis or thrombophlebitis or peritonitis, our efforts must be directed toward producing ante bodies in the tissue fluids and in the blood stream. Two recognized therapeutic agents can do this—antestreptococcus serum and protein therapy.

Surgery has been limited to incision and drainage of abscesses and to the surgical extirpation of infected myomata.

In closing let me say that from this brief survey of the history of obstetrics it is evident that the great advances in the obstetric field the past century have been along clinical lines and are the result of deduction from clinical experience rather than from the work of the research laboratory.

POLIOMYELITIS*

Oliver W. Hill, M.D., and Joe T. Smith, M.D., Knoxville

I REALIZE that Poliomyelitis is not a new subject to you. No doubt this malady infected the race from its earliest times. H. K. Mitchell reports finding an Egyptian mummy with evidence of having had poliomyelitis and who died 3700 B. C. The first medical man to call attention to it as possibly a clinical entity, was an Englishman, Underwood, who wrote on this subject in 1784. The first report of infantile paralysis in this country was in the fall of 1841. Dr. Colmer published a short note on the occurrence of ten cases of paralysis in infants, in the Feliciana Parish, Louisiana. However, any intelligent discussion of a malady with such bizarre manifestations, varied clinical symptoms and terrible sequelæ is of intense interest to the thoughtful observer and earnest clinician.

In view of the many unsolved problems connected with it, it seems profitable for us to discuss poliomyelitis and present a brief report of the recent epidemic which we had the privilege of witnessing. With a more detailed delineation of our clinical and epidemiological findings and impressions of the twenty-four cases coming under our personal observation.

Poliomyelitis is a systemic, infectious disease due to a specific filtrable virus. It is one of the most interesting as well as one of the most baffling problems in medicine today. So far as is known, man is the principal carrier and distributor of this disease. It manifests itself in acute form, and in some of those who recover, in various paralytic manifestations. The virus produces its characteristic lesions in the central nervous system. It may affect every part of the cord, and the symptoms which are manifest depend largely upon the part of the cord involved and the extent of the injury done. At one time we thought that this virus acted only on the anterior horns, affecting the roots of the motor nerves and leading to motor paralysis, hence the misnomer, anterior-poliomyelitis. Further researches have shown that, while the anterior horns are most frequently and seriously involved, the virus is not limited to these tissues and may affect slightly and temporarily, or more seriously and permanently, every part of the cord. It may also affect the brain alone; in which case it is spoken of as polioencephalitis. On post mortems, the virus has been found in the liver, spleen, kidney and other viscera.

Acute poliomyelitis attacks those who are in apparent health as well as those below par. Rarely there is a chill. Fever accompanied by malaise is an early manifestation. Headache, stiffness of the muscles of the neck and back in some degrees was found in all of our cases, (rarely any retraction), spontaneous pains in various parts of the body, sometimes a coarse muscular tremor and general muscular tenderness are common but in no wise distinctive manifestations. Unfortunately, there is little in the early symptomatology of this disease which is even indicative of its specific nature. The most prominent symptom is paralysis. It is true that in the majority of instances, paralysis is preceded by indefinite widely variable symptoms. There may be coryza, cough, lassitude and every symptom consistent with beginning influenza. In other cases, nausea, vomiting and purging may suggest some gastric or intestinal disorder. In young children, drowsiness is often marked. Paralysis usually begins in the lower extremities involving one or both legs. In other cases, it begins in the arms, and in still other, its first, possibly only, evidence is in some muscles of the neck and trunk. The progress of the paralytic development may be upward or downward and when the muscles of respiration are involved, death becomes imminent.

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

We have just discussed the various symptoms that may present themselves to us. A complete account of the differential diagnosis would involve a long treatise. It is evident that the diagnosis of poliomyelitis is not a simple matter, depending on a single factor or sign, but the whole history and physical examination must be taken into consideration, when every phase is carefully evaluated. With the adjunct laboratory findings, that is, increased cell count and increased spinal fluid pressure, one can be reasonably certain, especially when an epidemic causes one to be on the lookout. The clinician must eliminate tuberculous, epidemic, pneumococcic meningitis, also encephalitis, etc., which sometimes confuses him for a time. There is certainly little excuse for missing cases, and in epidemic times it seems hardly justifiable that a preparalytic case should ever be mistaken.

Management: We are faced with the difficult problem of treating a varied train of symptoms. In all cases, rest and quiet are paramount in importance, with whatever remedial measures which seem indicated to alleviate pain or restlessness.

Spinal Drainage: This should be repeated when indicated to relieve intracranial pressure.

The main indication for treatment in this disease is the prevention of paralysis, which is due to the action of the poliomyelitic virus on the nerve cells that preside over movement, and the nutrition of voluntary muscles. Fortunately, there is a period of evolution of the attack of poliomyelitis, the pre-paralytic stage, during which it may be possible to neutralize the virus before it can develop its maximum destructive effects on the motor nerve cells.

This is in a degree accomplished by the administration of immune serum when obtainable, if not, the anti-streptococcic poliomyelitic serum.

Immune serum is made from the blood of an individual who has recovered from an attack of poliomyelitis, whose blood presumably carries antibodies. It is reasonable to believe the more recent the attack, the more antibodies it would carry. These antibodies appear after the second or third day and have been found to persist for many years. This is given in doses of 15 to 30 c.c. and repeated as indicated. Times does not permit a description of the technic of preparation of the fluid.

Every effort should be made to obtain and keep this serum available for use. The Health Department of Tennessee has made such provisions and a limited amount can be obtained at this time. It is hoped that an ample supply will be had later.

Whole blood from a recovered case, injected intra-muscularly, would answer the same purpose with the exception of being more bulky, but it certainly would carry all the anti-toxic properties and could be applied easily and quickly under most conditions and surroundings.

W. K. Kellogg (6) observed: "In view of the widespread immunity of poliomyelitis indicated by the low attack rate, the possibility that the so-called normal serum of young adults may frequently carry immune bodies in serviceable amounts, and the difficulties in the way of securing an adequate supply of known convalescent serum would be worth while."

The anti-streptococcic serum advocated by Dr. Rosenow of the Mayo Clinic is prepared by the immunization of horses, with increasing numbers of dead and later living cultures of the organism. He believes this serum has curative properties and in view of our recent experience, we have been converted to this opinion.

The nature of this remedy, of course, requires early diagnosis and early administration to be beneficial, and repeated as indicated by the symptoms the patient presents; the return of the fever and high pulse rate after the twenty-four hour initial drop and of any symptoms referable to the nervous system. The initial dose varies with the age and weight of the child, with the severity of the attack, duration and degree of paralysis. We gave 5 to 10 c.c. under one year of age, 10 to 15 c.c. under two years, and 15 to 20 c.c. to older children, and repeated it as many as five times in one case. Our average was three injections.

Either this serum is curative or we experienced a very mild epidemic in our series studied, as we had no mortalities and a relatively high per cent of complete recoveries.

This serum was made available to us through the courtesy of Dr. Haygood of the Knoxville Health Department and through the kindness of the Mayo Foundation.

Clinicians differ in their ideas as to the most desirable of the three known routes, intramuscular, intravenous or intrathecal. We are convinced that the first mentioned is most desirable under usual circumstances, for the following reasons:

Intramuscular administration (3) is a convenient mode of access to the blood stream and absorption of a serum by this route is fairly prompt. It is desirable to precede this with a spinal drainage as the lowered intraspinal pressure would conceivably enhance the absorption. The intramuscular presents none of the alarming dangers of the intraspinal or intravenous administration.

It is many times difficult to get in the veins of a small child already nervous and apprehensive, especially in the home, where most of these cases are encountered. The inherent toxic effect of horse serum intravenously is hazardous, and according to Dr. Rosenow, (5) precludes its use intraspinously. Finally the many unpleasant reactions not easily explained which do occur. We had serum sickness to some degree with urticaria, etc., in 85 per cent of the cases, when the anti-poliomyelitic serum was used, demonstrating this inherent toxicity. However, no serious symptoms were encountered.

It has been very definitely proven (2) that more dye or serum will reach the spinal cord and brain substance through the blood system than from the spinal fluid. Serums or dyes when injected into the spinal canal must traverse the blood stream before reaching the brain substance, as they do not travel into the dural spaces of the brain and cord direct. Then, too, poliomyelitis is a general infection, and the antibodies should reach all portions of the body. It has also been shown that, where the cord meninges are irritated by the injection of any serum directly into the spinal canal, that the normal absorption is decreased.

It also requires considerable skill and experience to give fluid intraspinally, especially repeatedly. However, in skilled hands with carefully prepared immune serum, it may be used in conjunction with the intramuscular, in selected cases.

Epidemiology: The 1929 epidemic, like other epidemics, showed quite uniformly certain characteristics. The disease instead of involving at one time a large and continuous area, is dotted here and there; one, two or three cases forming a center, and a like manifestation somewhere miles distant. There may be one, two or three cases in every county in the State, but there are likely to be certain localities in which the incidence of the disease is greater. Taking into consideration only recognized cases, it has been found in the majority of instances, impossible to trace any connection between these individuals.

It requires but a few cases of recognized poliomyelitis to justify the health officer in proclaiming an epidemic. There may be only one case per 1,000 of population or only one per 2,000—an incidence which would be negligible in any other communicable disease—and, still, under these conditions, poliomyelitis should be regarded as epidemic. It will be understood that there are epidemics in which the incidence is much higher. In 1916, the incidence in Greater New York was about one in 750 of 100,000 population. Another characteristic of an epidemic of poliomyelitis is that after having visited one region, even in the scattered way we have indicated, it apparently spares the same neighborhood for a period of from one to four years thereafter. We are practically forced to conclude that the number of persons susceptible to this disease in any community is small. However, this statement should be made with reservations. It may be, and there are reasons for believing this—those who are apparently insusceptible in a given community are really immune and owe their immunity to having had at some previous time an unrecognized attack of the disease, with insufficient infection to cause noticeable paralysis. Some one remarked epigrammatically, "Poliomyelitis is common, infantile paralysis is rare."

The late Dr. Victor Vaughn (9) stated that "Acute Poliomyelitis is either a disease to which only a very small percentage of people are susceptible, or it is a disease to which practically all are susceptible." At the present time we have no conclusive evidence to base a definite decision on this question.

We have already called attention to the fact that in most instances, it is impossible to trace any contact, either direct or indirect, between two cases. A child on an isolated farm—a child who has never been a mile from its home, comes down with acute poliomyelitis. The next case may be ten miles away and may occur in a child under conditions of isolation quite as stringent as those prevailing in the first case. How can the distribution of the virus under these conditions be accounted for? (8) To us there appears only one possibility and that is, that the carrier of the disease is man. The virus may be transported by people in apparent health. It has been definitely demonstrated that the individuals who show no manifestations of having the disease themselves, may carry the virus in the upper respiratory passages. The route of egress and ingress seems to be this tract. Dr. Simon Flexner believes that it follows the nerve filaments of the olfactory nerves. (1)

The period of incubation (10) is from three to ten days; however, some cases have been reported as early as twenty-four hours and as late as eighteen days. All excreta should be destroyed as it has without doubt been proven that such excreta may carry the virus.

The question of the accuracy of diagnosis is sure to be brought up in the consideration of a tabulation of a series of successfully treated cases of poliomyelitis. All of our cases except two were confirmed by spinal fluid findings: i.e., increased pressure measured by the water manometer, increased cell count varying from 50 to 650 per m.m.

We have endeavored to present to you the cold facts as we found them, for your consideration and evaluation.

BIBLIOGRAPHY

1. Serum Protection and Serum Treatment of Poliomyelitis, by Dr. Simon Flexner. Bulletin New York Academy of Medicine, March 1929.

2. Anterior Poliomyelitis, by Rex L. Deverly, M.D. Journal of Bone and Joint Surgery, January 1929.

3. Intramuscular Use of Convalescent Serum in Treatment of Poliomyelitis, by E. B. Shaw, M.D., and H. E. Thelander, M.D., San Francisco.

4. The Problem of the Control of Infantile Paralysis, by John Lovett Morse, M.D.

5. Serum Treatment of Poliomyelitis, by Edward C. Rosenow, M.D., The Mayo Foundation, Rochester, Minn.

6. The Present Status of Convalescent Serum Therapy, by W. H. Kellogg, M.D., Berkeley, Cal.

7. Spinal Drainage, Value in the Treatment of Early Poliomyelitis, by J. C. Montgomery, M.D., and W. C. C. Cole, M.D., Detroit, Mich.

8. Epidemiology of Poliomyelitis, with Reference to Its Mode of Spread, by W. Lloyd Aycock, M.D., Boston, Mass.

9. Epidemiology and Public Health, Vol. I, by Vaughn.

10. Abts. Pediatrics, Vol. VII, page 468.

DISCUSSION

DR. A. F. RICHARDS: Poliomyelitis a disease to which paralysis is a sequela. I do not believe with the essayist when he accounts for the sparseness of incidence of poliomyelitis in any given epidemic as being due to the people having had polio of a light form at some time in their lives which has rendered them immune against the infection. I think it quite improbable that out of any given population that not less than 99 per cent of any generation would have had poliomyelitis even so slight that it would not have been detected to a greater or lesser extent. According to that theory, there would have been two and one-half million cases of mild polio in Tennessee within the present generation without recognition, which does not look reasonable to me.

In the epidemic referred to by the essayist there were officially reported 39 cases in a population of 150,000 people, which would be about one case to 3,000 population.

The epidemiology of this disease is of great consideration to us since we do not as yet know the exact cause of the infection, which we cannot control by any physical or sanitary means. We are, therefore, to find if possible some means of prevention. Sero-therapy referred to by the essayist is probably the nearest a success of anything yet suggested.

Poliomyelitis is self limited and self destructive and would not call so earnestly for interference if it did not result so often in a paralysis.

I have been led to the conclusion that our hope for control of the disease lies in convalescent serum, which should be made available at all times if possible. Some results reported are showing some very flattering statistics.

The following is reported from an epidemic in Ottawa, Canada, 1929, by Dr. T. A. Lomar: Out of 115 cases which were admitted to Ottawa Civic Hospital and in which diagnosis was verified by spinal puncture, 109 cases completely recovered without any paralysis after having been given 20 c.c. of convalescent serum, which was 94.8%. Five recovered with paralysis, one of these cases had only 10 c.c. of convalescent serum.

One case in Knox County epidemic, with which I was familiar, was a girl 13, who was at a lawn party with 13 other little girls, came down sick while playing on the lawn. She was put to bed and the other 13 girls went into the room with the patient and closely associated with the patient the remainder of the afternoon—none of these children became infected.

The child was taken home and the condition was diagnosed as poliomyelitis on the morning of the fourth day, verified by spinal puncture, and 20 c.c. of convalescent serum was given at 5:00 p. m. the same day.

The child was suffering pain in the head, back and joints. Temperature 102°, and at 2:00 a. m. the patient was in a heavy sweat, sleeping quietly for the first time since she was stricken. She recovered with paralysis of the lumbar and intercostal muscles and has sustained a very marked deformity of the chest.

I am of the opinion that if this child had had the blood serum earlier she would have escaped the paralysis. This opinion is based upon the reports which I have had the opportunity of seeing recently.

In the reports I have examined no cases were benefitted by blood serum after paralysis had taken place, therefore, it must be administered in the pre-paralytic stage.

I agree with the essayist that polio is not contagious, rarely has there been two cases reported in the same family in the same epidemic, and when two were reported they occurred at the same time generally.

In the New York epidemic reported in 1916, 8,634 families, there were only 4% of them had multiple cases and most of these occurred at the same time, which was good evidence that it was not transmitted from one to the other.

There should be kept by the State Laboratory an authentic list of cases in the state who may be called upon for blood in the event of an outbreak of Poliomyelitis.

Donors are rather difficult to find unless such a roster is available.

DR. JOHN M. LEE, Nashville: Mr. President, and Members of the Tennessee State Medical Society: Dr. Hill has covered this subject so completely and so concisely that he has left very little for any of us to say. However, there are one or two points that might be emphasized.

It is unfortunate that a disease which has such serious possibilities still shows so many points about which we are vague. We do not yet positively know the cause of this disease. Dr. Rosenow has found streptococcus so constantly associated with the cases that he has studied that we are almost forced to conclude that it has something to do with the disease, if it is not the specific cause itself.

One of the difficulties in our combatting of poliomyelitis I think is due to the fact that it is very hard to make a diagnosis early. For instance, we are told that in the average case with paralysis, there will probably be no increased paralysis after seven days. In those cases showing paralysis, we may conclude that the disease has run its course, or, to put it another way, it has done its worst in seven days. In other words, it has probably destroyed tissue within those seven days, and obviously we may not expect by therapeutics to replace destroyed tissue. Therefore, our endeavor should be to make the diagnosis early, in the pre-paralytic stage if possible.

That is not hard to do, as Dr. Hill has suggested, in the presence of an epidemic, but in so many communities poliomyelitis occurs only sporadically, and the first cases are not diagnosed even by the best doctors until paralysis has developed, in other words, until tissue has been destroyed, and then our therapeutic efforts are of no avail.

With that in mind, it behooves us to be constantly on the alert for these cases. In most cases that show the symptoms suggested by Dr. Hill, certainly we are justified in doing a lumbar puncture, and in the absence of facilities for finding the organism described by Dr. Rosenow, if we find an increased cell count, increased globulin, increased spinal fluid pressure, we might be justified in assuming that we are probably dealing with poliomyelitis, that is in the absence of any other specific organism, and adopt some specific treatment.

The convalescent serum perhaps is ideal, but not always available. The serum prepared by Dr. Rosenow is usually available at most of the drug houses, and if there is any question of doubt as to diagnosis, it seems to me a logical procedure to treat those cases as we treat diphtheria. We do not wait in suspicious cases for a bacteriological diagnosis of diphtheria, but give serum immediately, and under proper precautions it seems to me we might be justified in so treating these cases because of the possibility of permanent disability, to say nothing of the death of the patient.

We have used Rosenow's serum occasionally. Fortunately, it has not been my privilege to see an epidemic of this disease. We see a case only occasionally. I have used it, however, and in the cases where it was used, the cases were late. All of them, in fact, in which we used the serum had developed a paralysis, and you cannot expect much benefit to follow the use of serum at that late date.

In the literature we are told that there are so-called abortive cases, cases that show temperature and never show any paralysis, perhaps general irritability, perhaps stupor, perhaps slight rigidity in the neck, which is passed over in our examination, but never do these cases show distinct paralysis. It is a question as to how many of these so-called abortive cases occur and recover without ever being diagnosed. Of course, those are possibilities for disseminating the disease. (Applause.)

DR. WILLIAM LITTERER, Nashville: Mr. President and Gentlemen: The successful way to combat Poliomyelitis is to make an early diagnosis. This is the only way at present that we can hope to obtain results from our serum therapy.

We must give the serum early. However, I think the serum should be given even where there is some paralysis. It possibly will lessen the extent of the disease.

Dr. Hill mentioned the intramuscular method. I think that is all right, but this condition is not only systemic but attacks the spinal cord, and therefore intraspinal therapy is indicated in all instances where possible. This condition should be treated in a similar manner that we treat the epidemic type of cerebro-spinal meningitis due to the meningococcus, and also in the treatment of tetanus. That is, systematically and intraspinally.

Last year we found it quite difficult to obtain immune serum. Theoretically, persons who have recovered two or three months are the ideal individuals, since their sera should harbor very potent protective substances. These individuals are usually young children, hence are quite difficult to obtain sufficient amount of serum. It has been found that excellent results have been obtained from older children and adults that had contracted the disease eight to ten years ago. This makes it much easier to obtain the serum than from very young children.

We endeavor to keep this convalescence serum on hand all the time and especially in epidemics. We find that by consulting the orthopedist that he can put you in touch with these individuals.

DR. OLIVER HILL, Knoxville (closing): Mr. President and Gentlemen: I have very little to add, except to state this: As you noted, my paper was almost devoid of technicalities and was intended to be made practicable, because I believe the more simply any subject is discussed, the more pleasure and benefit all will derive from it. I attempted to discuss the subject from the standpoint of the clinician as he sees this disease in his daily work.

Early diagnosis is absolutely essential, because after the paralysis, injury has been done to the anterior horns, there is always some residual pathology, and damage is done to the muscular innervation.

As to the abortive type, Dr. Richards says he differs with me. It seems to me that it is just as conceivable that it is acquired as that it is natural. We thought the nation of Cuba was immune to yellow fever, but we now know that they had the disease and acquired immunity in infancy. Presumably, these individuals have some immune bodies in their blood, or they would contract the infection from the same individual. It is the rarest thing in the world to see two cases in one family. I recall only two such occasions. in those I saw brother and sister with Poliomyelitis. I have seldom been able to trace a contact direct.

I believe that this disease should be declared an epidemic when there are a very few cases, say two or three to 1,000 population, which is much more serious than any other malady that I know of.

You know the incidence in Greater New York was 750 per 100,000 in 1916. The incidence in Knoxville was rather high for our population.

As to spinal drainage; in the first place it can hardly be compared to epidemic meningitis because you do not recover your virus from the spinal fluid, but from the macerated cord or nerve. The virus is found in all the organs of the body, the spleen, the kidney, the liver, showing the infectious character of the disease; and the medication to be effective should go directly into the blood stream as well as spinal canal.

It is a disease that we all dread and that we wish we could never see, and feel almost helpless about. I hope I have added something to your thought and I thank you for your patient attention and discussion. (Applause.)

Conclusions:

First: Diagnosis should be made as early as possible. We consider it a most important factor.

Second: Early spinal drainage for diagnostic purposes. Repeated when indicated to relieve the pressure.

Third: Administration of immune serum or anti-streptococcic serum, intramuscular.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1930

EDITORIAL

A CENTENNIAL VOLUME

In the May issue of the Journal we inserted an announcement to the effect that if the membership is interested, certain of the proceedings of the Centennial meeting of the State Association will be compiled into one cloth bound volume and sold for $3.00.

Those who attended the meeting know that the speakers in the main were authorities in their various specialties. They presented addresses well worth preserving. Each member, of course, can preserve each issue of the Journal and bind the twelve issues into one volume and thus have all this material for the cost of binding, but the binding alone will cost more than $3.00.

If you are interested in such a volume please write this office.

The response so far has been good, but the larger the number of purchasers the less will be the cost per volume of preparation and the binding. We plan certainly not to lose money on this project and plans will not go forward unless a sufficient number are sold before all the numbers are run in the Journal.

SUGGESTED CHANGES IN OUR ORGANIZATION

Conditions have been brought about which seem to us to warrant a radical change in the organic law of the Tennessee State Medical Association.

The Secretary-Editor ventured to suggest some changes in our organic law at a meeting of the Board of Trustees before the last meeting of the Association.

One cannot discuss all the changes that are needed in one short editorial, but it should be stated briefly that the Board of Trustees should be clothed with complete power to act on any matter between interim of the meeting of the House of Delegates.

The House of Delegates should be reduced in size and really should meet on a day when the general meeting is not in session. For example, the House of Delegates at present is composed of the following groups: (1) elected delegates; (2) all officers; (3) ex-presidents in attendance.

Each Society is entitled to one delegate for each fifty members, or fraction thereof.

There are sixty-seven component societies. Four of these component societies are entitled to more than one delegate, as follows: Shelby, 6; Davidson, 5; Knox, 3; and Hamilton, 3.

If all societies had been represented there would have been eighty elected delegates to the House. Add to this figure the number of officers, which includes councillors, vice-presidents, and then add the ex-presidents in attendance, and it is readily seen that the House may be composed of over one hundred delegates. The facts are that nothing like this number ever attend the session of the House, and further, many of the delegates do not attend all the sessions of the House. There are a few delegates who attend every session. Besides these the House may be composed of an entirely different group each day, thus contributing to confusion, lack of understanding and lack of continuity of action.

It happened this year that matters were acted on one afternoon and the next day an entirely different group of men were in the House and the same matter acted on again. The first action was taken after full and free discussion. The second action was taken almost without discussion.

The time consumed in the House has become so burdensome to members that good men often decline to qualify as delegates.

The following suggestions are offered for consideration:

1. That the state be divided into about thirty component units. Each unit will have representation in the House on the basis of

one for each fifty members, or fraction thereof, and that the business sessions of the House be held on the night before the general meeting and on the last afternoon of the general meeting. By such a revision every society would be equitably represented. Men would not object to coming as delegates because there would be no interference with attendance on the scientific program.

Dr. Howlett in speaking to the House of Delegates when he was President of the State Society, recommended that the constitution be so revised that ex-presidents would not automatically be members of the House.

There is a sufficient number of component societies composed of two or more counties to demonstrate definitely the advantages of such combinations. Good roads and automobiles have brought about a change in our conditions. We should adjust ourselves to the change.

The instances in which the judgment of organized medicine is sought are multiplying and under the present organization it is difficult for Medicine to express itself.

The Secretary-Editor cannot speak for the entire organization. The Board of Trustees can speak within certain limitations. The various committees can act within limits.

Within the last two years there has been a wide divergence between two different committees in reference to the same matter.

Complete authority should be vested in the House of Delegates composed as above suggested, then complete authority in the interim between the sessions of the House of Delegates should be vested in the Board of Trustees and it should be the duty of the Board of Trustees to harmonize the action of all committees to the end that our efforts do not end in confusion.

Finances of the Association

Members of the House of Delegates will remember that a Committee was organized to produce a history of Medicine in Tennessee. This committee was given access to the funds of the Association to whatever degree was necessary to accomplish this purpose. Such action was necessary because a committee that was not free could not act effectively.

The Committee experienced many difficulties. The production of the books involved many costs that were not anticipated. To date the production of five hundred bound volumes and five hundred volumes not bound has cost $4,908.58 and all bills not yet paid. Without regard to the cost the price was fixed at $3.00 per volume. As the matter now stands the Association stands to lose in the neighborhood of five thousand dollars, but the Committee and the Association have done a creditable piece of work.

Many members have been under the impression that the Association has from $17,000 to $19,000 in net assets. *This never has been the case.* The audits from year year, as of March 31st, have shown assets in this amount and above, but it must be remembered that the expenses of the Association, including defense, for the next twelve months is chargeable to such a balance. Any man on pay-day may have a sizeable sum of money, but when current bills are all paid his balance may be not more than the proverbial two dollars.

The officers of the Association have been very careful in husbanding the funds of the Association with a result that our investments earned us over $700.00 last year. This income assists materially in deferring the date on which dues must be increased. When our revenue earning resources are melted away our income must be increased by increasing the per capita dues. It might be stated in this connection that we operate on per capita dues that are far less than most states of the union. The average for all states would be around $10.00 per year.

Finances and organization are always delicate subjects, but we venture a discussion of each in the belief that the Tennessee State Medical Association is composed of sensible men who will act right if they have the facts before them.

NEWS NOTES AND COMMENTS

The Southern Pediatric Seminar meets at Saluda, N. C., on July 28th to August 9th. Full information can be obtained from D. Lesesne Smith, M.D., Registrar, Saluda, N. C.

Dr. R. L. Murph, of Trimble, has moved to Halls, where he will practice in the future.

Dr. Henry Carroll Smith announces the opening of his office, at 1204 Medical Arts Building, Nashville. Practice limited to Ophthalmology.

Dr. R. L. Mathews, of Springfield, has returned home after a rather serious operation at one of the Nashville hospitals.

Dr. Basil Mayo has moved from Dresden to Union City.

MEDICAL SOCIETIES

The Middle Tennessee Medical Society met in Shelbyville May 15th and 16th. About one hundred fifty physicians were present. A good program was presented. The fall meeting will be held at Lawrenceburg with the following officers in charge: M. B. Davis, Nashville, President; J. H. Tilley, Lawrenceburg, Vice-President, and Theo. Morford, Nashville, Secretary-Treasurer.

The East Tennessee Medical Society met at Kingsport May 8th and 9th. A very interesting program was enjoyed in addition to the good fellowship which is always a part of these meetings. The next meeting will be at Cleveland. Officers elected were T. B. Yancey, Kingsport, President; C. C. Vinsant, Maryville, Vice-President for Upper East Tennessee; L. L. Barnes, Sweetwater, Vice-President for Lower East Tennessee; and Jesse Hill, Knoxville, Secretary-Treasurer.

The West Tennessee Medical Society met in Jackson May 15th and 16th. In both attendance and quality of program this year's meeting excelled the high standard of the Association. Officers elected were H. T. Collier, McKenzie, President; Lawrence Lindsey, Covington, and O. W. Fesmire, Atwood, Vice-Presidents; I. A. McSwain, Paris, Secretary; Dr. George McSwain, Paris, Assistant Secretary. McKenzie was chosen as the next place of meeting.

The American College of Physicians announces the *John Phillips Memorial Prize* of $1,500.00, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto. Those interested may obtain particulars by writing E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa.

The American Proctologic Society meets in Buffalo on June 22, 23, 24th.

The American Congress of Physical Therapy will conduct a week's post graduate work September 8-12 at the New Hotel Jefferson, St. Louis. Particulars may be obtained by writing the Executive Secretary, Suite 716, 30 N. Michigan Avenue, Chicago, Illinois.

COUNTY SOCIETIES

Coffee County—The Coffee County Medical Society met at Tullahoma on May 8th, with a full attendance.

An interesting subject, "The Significance of Abdominal Pain," was presented by Dr. Horace Farrar, of Manchester, and was discussed by the physicians present.

On June 5th, a meeting was held in Manchester, with Dr. W. M. Wilson, Tullahoma, reading a paper on "Pellagra."

Davidson County—

May 13th: "Consideration of Fibromyoma of Uterus," by Dr. C. S. McMurray. Discussion opened by Dr. Holland Tigert.

May 20th: "Treatment of Anemia in

Children with Iron and Copper," by Dr. Milton S. Lewis. Discussion opened by Dr. John M. Lee.

"Case Report," by Dr. Wm. R. Cate.

May 27th: "Spinal Anesthesia," by Dr. J. C. Burch. Discussion opened by Dr. L. W. Edwards.

The Society adjourned for a summer vacation. The next meeting will be held the first Tuesday night in September.

Dyer, Lake and Crockett Counties—The regular meeting of the Tri-County Medical Society was held on June 4th, with the following program:

"Case Report," by Dr. R. W. Griffin, Tiptonville; "Abscess of the Lung," by Dr. C. A. Turner, Dyersburg; "Case Report," by Dr. C. L. Denton, Dyersburg; "The History of Eclamptic Therapy, with Analysis of One Hundred and Fifty Cases at the Memphis General Hospital," by Drs. J. R. Reinberger and Phil C. Schrier, Memphis.

Gibson County—The Gibson County Medical Society met in the offices of the County Health Department May 26th at 8 p. m. There were twenty doctors present.

Dr. B. T. Bennett, of Trenton, read a paper on "Puerperal Eclampsia," and Dr. Horton Casparis, of Nashville, read a paper on "Colitis in Children." Both of these papers were freely discussed.

The Society adjourned to meet June 30th.

Greene County—The Greene County Medical Society enjoyed a banquet at the Brumley Hotel May 14th. The following doctors were present: C. P. Fox, Sr., I. B. Brown, R. O. Huffaker, R. D. Kellar, M. A. Blanton, L. E. Dyer, W. T. Mathes, L. E. Coolidge, C. P. Fox, Jr., Cecil Laughlin and R. S. Cowles.

A very interesting paper on "Abortions" was presented by Dr. L. E. Dyer. This was discussed by all members of the Society.

Dr. C. D. Coughlin, Veterinarian, U. S. Bureau Animal Industry, gave a most interesting talk on "Program of Eradication of Tuberculosis in Cattle," which is being carried on by many counties of the state. The discussion was from the economic and health standpoint. This program was heartily endorsed by the Greene County Medical Society.

Hamilton County—

May 15th: "Retrobulbar Neuritis with Report of a Case," by Dr. Willard Steele.

"Skin Grafting," by Dr. John B. Haskins. Discussion opened by Drs. E. D. Newell and J. L. Johnson.

May 22nd: "X-ray Diagnosis of Maxillary Polypii," by Dr. J. A. Beals. "When Is the Proper Time to Correct Squinting," by Dr. Stewart Lawwill. Discussion opened by Drs. J. M. Frere and S. H. Long.

May 29th: "X-ray Indications and Limitations," by Dr. Franklin B. Bogart. "Analgesia and Anesthesia in Obstetrics," by Dr. H. P. Hewitt. Discussion opened by Drs. S. S. Marchbanks and J. A. Moffitt.

June 5th: "Some Medical Conditions Encountered in the Elderly," by Dr. W. E. Bryan. "The Relation of Recurrent Hyperthyroidism to the Amount of Tissue Preserved in Operation on the Thyroid Gland, with Case Report," by Dr. E. D. Newell. Discussion opened by Drs. L. T. Stem and W. D. L. Record.

June 12th: "Review of Mycosis," by Dr. Frank F. Harris. Paper by Dr. E. C. Anderson. Discussion opened by Drs. J. A. Reynolds and W. E. Bryan.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—On April 30th, the regular meeting of the Five-County Society was held at Linden. Those in attendance were: Drs. D. R. Pickens and C. S. McMurray, Nashville; Drs. T. J. Stockard, C. C. Stockard, W. H. Neal, J. W. Danley and M. L. Lumpkins, of Lawrenceburg; Dr. J. H. Pickard, Hohenwald; Dr. O. H. Williams, Savannah; Dr. W. E. Turner, Lobelville; Dr. W. E. Boyce, Flatwoods, and Dr. O. A. Kirk, of Linden.

Dr. D. R. Pickens read a paper on "Cancer of the Colon," and Dr. C. S. McMurray's subject was "Gastric and Duodenal Ulcers." The reading of these papers was followed by a general discussion of the subjects involved.

The Five-County Medical Society met at Waynesboro on May 27th, with twenty physicians present. The following papers were read:

"Differentiation of Kidney Disease Commonly Called Bright's," by Dr. Risden Deford, Savannah; discussed by Drs. J. W. Danley, T. J. Stockard, T. A. McAmis, H. C. Boyd and Watt Yeiser.

"Dressings, Wet and Dry, and Their Uses," by Dr. Paul DeWitt, Nashville; discussed by Drs. Geo. C. Williamson and W. E. Boyce.

"Diseases of the Cervix Uteri," by Dr. A. A. Jackson, Florence, Alabama. Discussed by Drs. Watt Yeiser, Paul DeWitt, W. E. Boyce and Geo. C. Williamson.

Knox County—

May 13th: Dr. Tom R. Barry on "Hematuria," with discussion opened by Dr. E. R. Zemp.

May 20th: Dr. R. B. Wood's subject was "Diagnostic Difficulties in Diseases of the Lungs." Dr. C. J. Carmichael opened the discussion.

May 27th: Dr. E. G. Wood's subject was "The Prevention and Diagnosis of Acute Abdominal Conditions." Dr. A. G. Kern opened the discussion.

June 3rd: "Neo-Natal Period," by Dr. Joe T. Smith. Dr. Oliver W. Hill opened the discussion.

Roane County—A meeting of the Roane County Medical Society was held May 22nd at the City Hall.

The following members were present: Drs. J. C. Flay and G. P. Zirkle, of Kingston; Dr. J. C. Wilson, Rockwood; Drs. W. W. Hill, T. L. Bowman and F. A. Neergaard, of Harriman.

Robertson County—The Robertson County Medical Society was entertained at its regular monthly meeting by Dr. and Mrs. W. W. Porter at their home May 20th. At noon a most delightful luncheon was served and the program was held in the afternoon. A number of visitors were present from out-of-town, and they were: Dr. Duncan Eve, Jr., John C. Burch, W. H. Witt, W. D. Haggard, Herman Spitz and C. S. McMurray, Nashville; Dr. W. L. Gossett, Adairville, Ky., and Drs. M. W. Boozer and C. F. LeLap, from this city.

Dr. Herman Spitz was first on the afternoon program, choosing for his subject, "Hay Fever." Following him came Dr. C. S. McMurray, who read a paper entitled, "Fibroid Tumors of the Pelvis," while Dr. Haggard presented a very interesting surgical case report, illustrating it with lantern slides. All of these subjects elicited quite liberal discussions and were well received.

Local members of the Society present were: Drs. Thomas, Porter, Moore, Hawkins, Bradley, Fentress, Jones, Banks, Garner and Fyke. The next meeting will be held on the third Tuesday in June at Ridgetop as the guests of Dr. W. S. Rude.

Stone's River Academy of Medicine—The members of the Stone's River Academy of Medicine held their monthly meeting at Rutherford Hospital on May 14th. The meeting was featured by a dinner at which twenty were present, and the reading of a fine paper by Dr. Sam Cowan, of Nashville.

Sumner County—A meeting was held on May 7th. Dr. O. N. Bryan, of Nashville, read a paper.

Warren County—The Warren County Medical Society met May 14th and elected E. L. Mooneyham, Rock Island, President, and J. S. Harris, McMinnville, as Secretary. The Society will meet bi-monthly.

BOOK REVIEWS

A TEXT-BOOK ON ORTHOPEDIC SURGERY

A Text-Book on Orthopedic Surgery. By Willis C. Campbell, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Tennessee, College of Medicine, Memphis. Octavo volume of 705 pages, with 507 illustrations. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, $8.50.

As stated inthe Author's Preface, "the purpose of this book is to present to the student, the general practitioner, and the surgeon, the subject of orthopaedic surgery in a simple and comprehensive manner." That this purpose has been quite successfully attained, as far as it is possible by a certain amount of compromise to make it at the same time both simple and comprehensive, is evidenced by a study of the text, as well as by several reviews already published.

It is a compact volume of 700 pages, well illustrated and clearly printed on good paper and has an excellent index. There is a valuable bibliography at the end of each chapter. A number of errors, mostly typographical, are observed, but such are not unusual in first editions. The classification of subjects is somewhat different from other books on this branch of surgery and has decided advantages, though any arrangement must be, to a large extent, arbitrary when dealing with such a wide variety of conditions.

The chapter on "Orthopaedic Examination" is unusually well done. However, the paragraphs pertaining to the sacro-iliac joints describe certain signs with positive interpretations which, though they have been accepted by many, have never been proven and are, in the reviewer's opinion, largely presumptive.

The chapter on apparatus discusses the principles involved in the use of plaster of paris and mechanical appliances, and, briefly, some of the technic of preparation and application of some of the splints and braces in common use.

Operative treatment and technic is accorded more space than one might expect in a treatise of this size. As a text for students and practitioners some of this space might better have been devoted to pathology, diagnosis and principles of treatment, valuable as the former may be to the orthopaedic surgeon. Likewise, fractures receive much consideration, though it does not attempt to cover this field completely.

The fact that this book emphasizes the operative side of the subject is in line with modern tendencies and will, no doubt, receive approval from many of the younger surgeons, including general surgeons who are inclined to take any case that is operative. Others may feel that conservative methods and the special preoperative and post-operative care, which largely distinguish our specialty from general surgery, should have received relatively more attention.

The reviewer has enjoyed the reading of Dr. Campbell's book and wishes to congratulate him on this very creditable and valuable addition to the literature of modern Orthopaedic Surgery.

R. WALLACE BILLINGTON.

Place Your Card
in the
Professional Directory
(See Advertising Section)

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Disease Factors Modifying Gas-Oxygen Technique in Exodentia. E. I. McKesson, M.D., Toledo, Ohio. Current Researches in Anesthesia and Analgesia. March-April, 1930.

In dental work, as in anesthesia for other operations, efficiency of respiration is, of course, of paramount importance. In brawny indurations of the neck from infections, tumors and other obstructions, the gas must be given under pressure. Anaemic patients should be anesthetized slowly with large percentages of oxygen.

In chronic pulmonary tuberculosis labored breathing must be combatted by preoperative administration of morphine. Asthma does not require any special technique except the use of adequate pressure to secure prompt anesthesia. In well advanced cardiac cases with shortness of breath, etc., light anesthesia, plenty of time for induction and unobstructed airway.

In hyperthyroidism morphine is given before hand to allay nervousness and excitement. The dental work should be done rapidly and all done at one sitting since anxiety over another operation may be a serious handicap to the patient's recovery. In children with status Lymphaticus, in the author's experience there were no unusual experiences except in two cases there was respiratory obstruction that required increased pressure.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Dermatological Abstract. Studies of Inorganic Salts of the Blood in Psoriasis. By J. F. Schamberg, M.D., and Herman Brown, B.S., Philadelphia, Pa., May 1930. Archives of Dermatology and Syphilology.

They examined the blood of twenty patients in various stages of activity for the calcium-potassium ratio and for the content of magnesium and phosphorus. These constituents of the blood did not materially vary from the normal.

Calcium	9 to 11 mg. per 100 cc.
Magnesium	1 to 2 mg. per 100 cc.
Potassium	8 to 20 mg. per 100 cc.
Phosphorus	2 to 4 mg. per 100 cc.

Lichen Spinulosus Following Intradermal Application of Diphtheria Antitoxin. By S. Wm. Becker, M.D., Chicago, Ill., May 1930. Archives of Dermatology and Syphilology.

He reports a case of lichen spinulosus following a positive Schick test. The lesions came up a day or two following the test and faded in about two weeks.

Cosmetic Work on the Face. By Clarence J. Broeman, M.D., Cincinnati, Ohio, May 1930. The Urologic and Cutaneous Review.

He deals with treatment of superfluous hair, warts, chloasma, leucoderma, enlarged pores and cutaneous horns. He outlines very clearly the various methods that he has successfully used.

INTERNAL MEDICINE

By R. B. Wood, M.D.
Medical Building, Knoxville

EPILEPSY

The ideas concerning causation and treatment of this disease have undergone frequent changes; so much so, that any new thought expressed is looked upon by many as the possible premature birth of unwarranted conclusions of the ambitious. No one would dare suggest a common cause, yet many suggest a procedure for alleviation. In fact the traditional treatment smacks somewhat of routine, and even some of the prescribed never remedial agents tend to incorporate the idea of a panacea for all forms.

Wilder (Mayo Clinic Bull. Vol. 2, 1920) suggested the high fat-low carbohydrate diet as a substitute for the older regimen of starvation, the end result being, as in the latter, the production of an abnormal acid-base equilibrium acting either as a sedative would to the nervous system, or as a prevention of a tendency toward a developing alkalosis.

Others, however, believe its effect is exerted through an alteration on the basic elements of the nervous tissues, fat and water, causing a lowered conductivity of the nerve cells.

The recommendation by Fay of restriction of fluid intake may be also placed in this same group. Water absence obtained either through lowered intake, increased elimination or by increasing its oxidation has ultimately the same effect and the metabolism of cells will be affected similarly, namely the production of a shift of the acid-base balance toward the acid side.

In using the Ketogenic diet Barborka (Epilepsy in Adults, Arch. of Neur. & Psych., May 1930), calls attention to the fact that these must be guarded against any deficiency in the long continued diet. Calories, proteins, minerals and vitamines must be provided for. Unless calcium is added there is ordinarily a negative balance in the calcium phosphorus ratio. A slight increase of proteins above the normal is essential because ketosis takes the protein molecule for its antiketogenic fraction. The fact that many women cease to menstruate while in ketosis for long periods of time calls attention to the possible lack of Vitamines B and E.

If one hundred cases placed and kept on the ketogenic diet for a period varying from three months to five years, it was found that hunger was absent in 34 per cent and less than 50 per cent of the men were unable to follow their usual labors. There were twelve cases whose convulsions were controlled, while 44 per cent were definitely benefitted, leaving 44 who were not.

Fay (Arch. Neurol. and Psych., May 1930), calls attention to the reported occurrence of excessive collections of fluid in cases associated with convulsive seizures in eclampsia, uremia, trauma acute alcoholism, etc. This abnormal finding in the subarachnoid fluid spaces over the frontoparietal regions of the brain is found even in early epileptics. Rowntree's reports on water intoxication indicates that when excessive quantities of water by tube is given dogs typical seizures may be produced. Weed reports the production of seizures when hypotonic solutions are given by vein. Kubie produced cerebral edema with convulsions in hydrated animals in which spinal drainage was not instituted, but where drained they remained symptom free.

Elsbery and Pike produced convulsions in animals by using one-half the usual dose of absinthe when hydration methods were used first, though twice the usual dose was needed if dehydration existed. Gamble has apparently proven that water storage occurs in the interval between convulsions in the body, and is released after an attack. With the appearance of acidosis in children due to rapid elimination of fixed base, dehydration results.

Thus the ketogenic diet acts in a favorable way, favoring loss of fixed bases and consequent loss of fluid from the cerebro-spinal system.

Peterman states that epileptics rendered free of convulsions by the ketogenic diet do not have reoccurrences even though an alkalosis is produced, thus minimizing the importance of the ketosis per se.

The methods originally devised for the dehydration of cases with tumor of the brain and cerebral trauma, were applied to the epileptic cases. Three to six weeks or longer is necessary for the desired dehydration. An estimate of the unrestricted intake and output ratio is obtained, after which withdrawal of the spinal fluid and replacement of air with photographs is done. Ten to fourteen ounces of fluids are then allowed. After the tenth to the fourteenth day adjustment of the output and intake levels will be noted.

The diet from the standpoint of its water content should then be adjusted, with the view of removing as much fluid as possible. Carbohydrates are cut to a low minimum and extra salt is eliminated. The diet must be continued.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

Retrodisplacement of the Uterus as An Obstetrical Complication. By E. D. Plass, Journal A. M. A., Vol. 94, No. 4, page 255.

Retrodisplacement of the uterus as an obstetric complication is not a new subject, but apparently no attempt has been made to learn what will happen if nothing is done to correct same during delivery and afterward. Conservatism has been advocated to such a degree that it has lost its importance. However, it is blamed for sterility and early abortions, and the advise is usually that it should be replaced. It is likewise felt that childbearing produces retrodisplacements and that they should be corrected. He divided posterior displacements into "congenital" when no etiological factor is determined, and "acquired" when an obstetric episode is held to be the productive factor. It has been estimated by many that 20 per cent of all unmarried women have a congenital retroverted uterus.

Dr. Plass studied fifteen hundred private cases, and 438 patients were selected for this study to learn the course of a pregnant retroverted uterus, and they were examined before the twelfth week. Sixty-two (14 per cent) of the 438 had retroversions at the first examination; 376 with the uterus in normal position; 11 per cent of the retroversions occurred in primiparas, and 17 per cent in multiparas. This alone shows that retroversion is very common in early gestation.

He made no attempt to replace the uterus, and excluding seven patients with abortions, from the 62 patients presenting retroversions, it was found that all of them had replaced themselves by the fourth month. Likewise the incidence of abortion was studied, and it was found that there were 21 spontaneous abortions (6 per cent) in the normal position of the uterus, and there were 6 (10 per cent) in the retroverted position. It is shown that most of the abortions in the retroverted uteri occur before the tenth week, and that pressure could scarcely have been a potent factor, therefore, if one assumed that retroposition of the uterus is not a potent cause of sterility, and at least 20 per cent have retrodisplacement, that the frequency of this complication immediately becomes apparent. He has never seen the occurrence of pregnancy in an adherent retroverted uterus.

Among 376 patients with an anterior position seen early in pregnancy, 45 did not go to term, or were delivered elsewhere, leaving 331 on whom post-parttum information is available. Examinations were made, fourteenth to eighteenth day after delivery, and then again from six to eight weeks. His record shows 298 discharge examinations with 47 retroversions, or 16 per cent. While 281 final examinations showed 62 retroversions, or 26 per cent—54 of the 62 with retroversion seen in early pregnancy were followed to term and after delivery, 18 (37 per cent) of 48 showing retroverted uteri at the time of discharge, and 28 (60 per cent) of 47 having a retrodisplaced uterus at final examination. For the entire group there were 19 per cent retroversions at the time of discharge and 30 per cent at final examinations. He says it is unfortunate that later examinations could not be made to see whether or not the positions were permanent.

In his entire series of 1,500 patients there were still a 20 per cent incidence of retroversion at discharge, and 30 per cent at final examination. Therefore, it is assumed that since there are 20 per cent congenital retroversions in all cases, that delivery has only accounted for an increase of 10 per cent and it is not unlikely that many of them returned to normal position. He made both discharge and final examinations on 854 patients in the whole group, and found that 11 per cent of these women, the uterus was retroverted at the end of two weeks, but had had its anterior position at the end of two months without corrective measures. On the other hand, 12.7 per cent of the patients showed the uterus anterior at discharge, and retroverted at final examination. This interchanging position could only be explained by involution of the uterus.

A study of the suspension of the uterus was studied in the entire series, there were 36 of these. Thirty-one of such patients were delivered under his supervision. With one exception, the uterus was anterior when first seen (13 were examined before the twelfth week of gestation) but among 26 patients the discharge examination showed three (11 per cent) retroversions, and final examination five (20 per cent) of the 25 patients had retrodisplacements. He says his series of this study was too small, but that recurrences were in those patients who were operated on as nulliparas, and who therefore probably had congenital displacement, and that the fundamental factor leading to retrodisplacement is not removed by the usual type of suspension operation.

The reviewer is quite in accord with this article, and feels that congenital retroversion is very common, and likewise that nearly all of them if left alone will replace themselves during pregnancy. He has at present a congenital retroversion, which was present prior to pregnancy, and which could not be replaced manually on many occasions, and told the patient that it was probably adherent, and that she should be closely watched if pregnancy occurred. Pregnancy occurred and at the end of three and one-half months the uterus restored itself to its normal position.

OPTHALMOLOGY

By Robert J. Warner, M.D.

Doctors Building, Nashville

Concentric Contraction of the Visual Field. William D. Rowland, M.D., F.A.C.S., and Allan Winter Rowe, Ph.D., Boston, American Journal of Ophthalmology, May 1930.

Among nineteen hundred patients in a general medical service, routine examination disclosed one hundred who had marked concentric contraction of the form and color fields. Some of these were related to endocrine disturbance, others to lesions affecting the central nervous system, syphilis, tuberculosis, or hepatic dysfunction.

Their summaries and conclusions were:

1. In addition to the common recognized causes of concentric contraction of the visual fields, such as optic and retinal atrophy, hysteria, glaucoma, and optic neuritis, this study illustrates the fact that several other disease conditions may produce a like result.

2. Of endocrine conditions, disorders of the pituitary seem to exercise a primary influence, and these not necessarily associated with hyperplasia of the gland. All but very few of the thyroid and gonad cases showing the eye condition demonstrate a complicating disease state such as in non-endocrine cases is found in association with the eye condition. For this reason neither thyroid nor gonad disturbance is to be regarded as of primary importance in analyzing the visual phenomenon, though as factors of minor importance they cannot be rigorously excluded.

3. In addition to the endocrine conditions there is a sufficient incidence of eye changes in lesions affecting the central nervous system, in syphilis, in tuberculosis and in hepatic dysfunction to warrant their consideration as probable causal agents of primary significance.

4. The laboratory studies give clear cut evidence of functional renal disturbances which are to be interpreted broadly as showing a frequency of metabolic disturbance in excess of that in similar groups without the characteristic eye findings.

5. From the points noted above it seems reasonable to conclude that in patients demonstrating marked concentric contraction of the visual fields the possible presence of any of the above as well as of the commonly recognized entities should be investigated in arriving at a diagnosis.

6. There are apparently many cases of marked field contraction in which the condition has not been detected.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

Bone Block Operation for Drop Foot Analysis and End Results, by Willis C. Campbell, M.D., Journal Bone and Joint Surgery, April 1930.

The bone block operation to prevent foot drop in paralytic cases was designed by Dr. Campbell in 1922. Since then it has been employed in his clinic in 300 cases. The purpose of the procedure is to build up a bone stop joint behind the ankle.

Through a straight incision over or to either side of the tendo achilles, the tendon is exposed, severed by "Z" plastic method, or if not shortened, retracted to one side. The incision is then carried down to the ankle joint after retracting the tendon of the flexor longus hallicus to the inner side. The fat and connective tissues between the os calcis and the ankle joint are removed and a pyramidal space is cleared next to the joint on the upper surface of the os calcis. The posterior capsule is incised transversely and the posterior extremity of the astragalus is removed. After this the cartilage is removed from the subastragalar joint. A cavity is made on the os calcis next to the joint and a pyramidal mass of bone consisting of a large piece, preferably of spongy bone, with smaller particles are packed around it, the mass forming a cone. These grafts are often secured from the mid tarsal region when stabilization there is also required. Clinical results are shown in the following tables:

Clinical Results

Total Number	225
Bone Block efficient	211
Bone Block deficient	14
Pain in heel	4
Late fracture of graft	1

Roentgenographic Demonstration

Total Number	143
Well developed osseous process	133
Deficient osseous process	10
Late fracture of graft	1

This has been found to be an efficient method of preventing foot drop by a large number of operators.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon, M.D.

Doctors' Building, Nashville

Nasal Sinus Disease in Small Children, by L. W. Dean, M.D., St. Louis, Mo., The Laryngoscope, May 1930.

No discussion of this subject would be complete without consideration of the etiological factors concerned. We must think of the following possible factors:

Deficient diet; poor hygiene, including improper clothing and ventilation; allergy; metabolic disturbances; climatic conditions; especially does lack of sunlight influence its production; swimming; endocrine disturbances; nephrosis; diseased tonsils and adenoids; nasal blockage; infection, especially in contagious disease.

Predisposing causes greatly influence the ease with which infections invade the mucous membranes. In the absence of allergy, it is evident that a healthy child resists infection better than a poorly nourished child, and even when infection is present it does not have the same clinical significance. It is impossible to consider sinus disease in infants and young children without considering deficient diets as important etiological factors.

To know what prepares the tissues for infection is more important than to know the infecting organism. Were it not for allergic states, nutritional disorders and endocrine disturbances, we would not have many cases of sinus disease. Dr. Daniels showed that every white rat fed on a diet deficient in Vitamin "A" developed a sinus suppuration. In the early stages a proper diet controlled the sinus trouble, as the sinus disease became chronic, it could not be cured by diet. We naturally conclude that while proper diet is essential in the treatment of the sinus, it does not obviate the necessity of proper laryngologic therapy.

Diets deficient in Vitamins plus something else, cause sinus infection. Shurly has shown that Gram negative organisms in the nose and throat, such as the micrococcus catarrhalis, become pathogenic when injected into animals fed on diets deficient in Vitamin "A."

From infancy until death we combat the streptococcus. Early in life he is in the lymphoid tissue of the throat, later in the sinuses, then in the gall bladder, the teeth, the appendix, then he lives in the prostate, the cervix, uteri, the colon. It is impossible to cut out all of the places in which he lives. We fight our battle best by keeping up our immunity and our resistance. Vitamins and proper hygiene are the important things in this battle.

The influence of a diet deficient in Vitamin "A" on the epithelial structures of the respiratory tract has been shown to be the substitution of stratified keratinizing epithelium for the normal type. It has been found if these epithelial changes were not too severe certain of them cleared up rapidly with the administration of cod liver oil. The extent of the healing largely depended upon the destruction due to the infection that was present; that the infection persisted after the administration of cod liver oil. That the changes in the epithelium appear prior to infection is very instructive.

The allergic nose must be watched for in children. Many of these allergic patients have numerous unnecessary operations. There is no objection to operating upon the allergic nose in a child if operation is needful. Many have suppurative sinus disease, in addition to the allergic condition.

The finding of 10 per cent, or more, eosinophiles in the nasal discharge indicates allergy. The absence of eosinophiles in the nasal discharge does not exclude the allergic nose. It is probably that allergy interferes with ciliary action thereby causing stagnation in the sinuses with resulting infection. The allergic nose if often temporarily benefitted by any type of nasal operation. Asthma in children is often benefitted by treating a nasal sinusitis.

The patients treated are those who have polynuclear cells in the sinus discharges. The constant appearance of evidence of sinus infection at the time of asthmatic attacks permits prediction of satisfactory results if the sinusitis is cured.

Malnutrition in children is often associated with chronic sinusitis. It is questionable as to which is primary. Proper treatment of the sinuses is an essential part of the treatment. Many cases simulating chronic tuberculosis are improved by eradication of chronic nasal sinusitis. Many cases of acute infectious arthritis improve with the removal of the tonsils and are controlled only by the treatment of a co-existent sinus infection. In chronic arthritis, or Stills disease, in many cases the eradication of sinus infection has been very beneficial.

Every child in which an upper respiratory disturbance is followed by fever in which no ear or lung condition is demonstrable should be considered as a probable residual sinus case. If in such a case there is anterior cervical adenitis, with no tonsillar disturbance, one should consider that the trouble is probably in the nasal sinuses. As a part of the general oedema in nephrosis or parenchematous nephritis we get clouding of the nasal sinuses on x-ray, this is the result of the disease, and not the cause. In these cases the most that should be done in the majority of instances is to use ephedrin.

Glomerular nephritis associated, as it is, with streptococci somewhere in the body is quite a different problem. Only rarely, however, is a radical procedure indicated.

The first step in the treatment of nasal sinusitis in children is the removal of the cause. The diet, allergy, endocrine disturbances and all systemic etiologic factors must be considered. It is essential that these children do the things that normal children do. Diseased tonsils and adenoids should be removed. The ordinary treatment for acute sinusitis is indicated during acute exacerbation. One per cent ephedrin is especially beneficial at this time. When polypi are present an allergic basis should be carefully sought. The polypi should be removed in the usual way. Operations on the nasal sinuses of children, other than meatal drainage of the maxillary antrum, is very rarely indicated.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Urinary Calculi in Infancy and Childhood, Meredith F. Campbell, M.D., Jour. A. M. A., May 31, 1930.

In India and Asia Minor urinary calculi are frequently seen, but is less often encountered in the United States. The author reports stone found in thirty out of 2,420 infants that came to autopsy. The question as to why and how calculi are formed remains unanswered, but infection and urinary stasis are believed to contribute to their development. Urinary calculi may occur at any age; they are reported in a six and an eight months fetus. The author's cases averaged 9.8 months of age. The disease occurs most often in boys. The more important pathological changes found are pyelonephritis, hydronephrosis, pyonephrosis, ureterectasis with or without stricture, vesical dilatation, diverticulosis. The most frequent symptoms are pyuria, urinary frequency and dysuria, with localized, radiating or indistinct pain. Hematuria may or may not be present. Pyuria is the most constant symptom, and when it persists after four weeks of medical treatment, a complete urologic examination should be made. This may not disclose a stone, but some major urologic condition like congenital urinary obstruction will be found to explain the persistent pyuria. The diagnosis of urinary calculus may require much study, including radiography, cystoscopy, ureteral catheterization, renal function tests, laboratory examinations of blood and urine in addition to careful history and physical examination. Usually surgical treatment is necessary to relieve the patient, though nonoperative means aid the stone's passage in a few. The operative treatment of stone is as satisfactory in children as in adults and should be employed when urinary tract injury is evident or when it appears that migration with expulsion seems unlikely.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Fractures Around the Elbow. H. G. Humphires, M.D., The Medical Journal of Australia, 1:39-41, January 11, 1930.

Fractures around the elbows are of common occurrence in children. The injury may involve one or more of the bones articulating at this joint. The commonest situation for the line of fracture is in the lower end of the humerus, the so-called supracondylar variety. This being so, it is important to note the progress of ossification in this situation, as generally accepted.

According to the line of fractures, the following names are applied to the different types: supracondylar, intercondylar or T-shaped, fracture of external or internal condyle, of the articular process, capitellum or trochlea and of the external or internal epicondyle.

The commonest is the supracondylar fracture. It may be incomplete, greenstick variety, but is more often complete. The line of fracture varies according to the direction of the force responsible for the injury. In most cases the lower fragment is displaced backwards and upwards, the force being applied on the out-stretched hand and forearm and the line of the fracture running from the front upward and backward, the so-called extension variety. On rare occasions the lower fragment may be directly displaced forward and upward, the line of the fracture running from behind upward and forward, the so-called flexion variety. In others the main direction of displacement is to one or the other side, more often to the inner side. In all three types there may be in addition some rotation of the lower fragment. In supracondylar fracture the brachial artery, ulnar, median or musculospiral nerve may be involved, either at the time of the accident, when it is more or less inevitable, or subsequently, in which case it is most often due to faulty treatment.

In supracondylar fracture with forward displacement of the lower fragment, the brachial artery is particularly apt to be injured. I have seen two such cases in which pulsation was noted to be lost at the wrist immediately following the injury; in both patients at operation the vessel was exposed and found to be acutely felxed over the projecting lower fragment, so much so that transmission of the pulse was completely blocked at this spot. On replacing the fragment and applying warm pads to the vessel, the circulation was gradually restored, proving that the arterial intima in children will tolerate much abuse. In such cases after correction of the displacement the limb is best maintained in the extended position for at least one week before being placed in the position of acute flexion.

Also inevitable, taking place at the time of the accident, is the damage to the median nerve which on rare occasions may occur in supracondylar fractures with backward displacement of the lower fragment. It is caused by the lower edge of the upper fragment projecting through the brachialis anticus muscle. This condition also may require surgical intervention, that is, when signs of nerve block persist after correction of the bony displacement.

Fracture of the internal epicondyle, epitrochlea, is more common in children than in adults, and often accompanies dislocation of the elbow. Being intracapsular in children it may be displaced into the joint cavity, thereby limiting movements, so necessitating removal by operation. In children this condition is really an epiphyseal separation. There may be an associated ulnar nerve injury resulting primarily from faulty treatment, for example, too vigorous passive movement, or later still from chronic irritation, in which case anterior transposition may be required. The fracture is usually drawn downward by the contraction of the flexor muscles attached to it.

Fracture of the external epicondyle is extremely rare.

Fracture of the external condyle is almost as common in children as supracondylar fracture, whereas fracture of the internal condyle is rare. In either type the fragment does not tend to be much misplaced and can generally be replaced by manipulation. In exceptional cases where there is complete separation and rotation, suture of the periostetum and fibrous tissue may be necessary to correct the displacement.

T-shaped fracture is very rare in children. Bristow denies its existence in childhood, but it has been observed in this hospital.

In all cases of fracture around the elbow, diagnosis depends on careful palpation of cardinal points and evidence of pain and abnormal mobility. Skiagram should be taken, generally in two directions, from side to side and antero- posteriorly.

In treatment at the fracture department of the Children's Hospital we adopt Sir Robert Jones' methods for all fractures around the elbow, with the exception of olecranon fractures and those rare cases of flexion supracondylar fractures to which reference have already been made.

The administration of anaesthesia is advisable in most circumstances. Continued downward traction is exerted on the extended forearm, and assistant applying counter-extension to the arm. The lower fragment is carefully manipulated into position. It may be necessary to hyper-extend the forearm to disengage the fragment. The forearm is then carried up into the acutely flexed position with full supination and retained in that position by bandaging, the limb being supported by the cuff and collar method or by a suitable modification. Omission of any one detail may lead to disastrous results. The angle of flexion will be less acute, according to the degree of swelling of the limb. The pulse at the wrist must be constantly observed, since in these fractures there is always the grave risk of interference with the circulation and subsequent development of ischaemic paralysis. For the same reason pain in the limb may be a very serious symptom. Therefore, we may have to be content with the right-angle position for some days before the position of acute flexion can be attained without risk to the circulation.

The bandage is removed and reapplied daily for the first four days, after which period the limb need not be so acutely flexed. In some patients in whom the acutely flexed position will tend to tilt the lower fragment forward, the angle of flexion must be slightly opened out or increased.

After two weeks when there is fairly firm bony union, the forearm is gradually brought down a few centimeters every few days until a right angle is reached, when the sling may be discarded, possibly at about the end of the fourth week. In lowering the forearm we must be sure the patient can actively regain the acutely flexed position again for some days before continuing to open out the angle of flexion. During all these weeks, forced passive movement is strongly contraindicated; in fact, only after four weeks should passive movement be considered, and if then adopted, it should be of the mildest degree, at all times avoiding infliction of pain.

Most of the evils accompanying fractures around the elbow are due to neglect of one or more details in treatment.

Faailure to correct displacement leads to impaired function at the joint and tends to expose nerves to trauma.

Over eagnerness on the part of the surgeon to open out the angle of flexion may cause considerable damage to the tissue and lead to a condition of myositis ossificans, or else induce a block in one of the nerves in the region of the fracture, ulnar, median or musculospiral.

If we insure power of flexion by these methods, we may rest assured that the power of extension will eventually follow, even though it may not be complete for three months from the date of injury.

In the ulna, fracture of the coranoid process is very rare except when associated with backward dislocation of the elbow. In treatment we find that the adoption of acute flexion gives quite satisfactory results.

In fracture of the olecranon process in children there is very little tendency for the fragment to separate, owing to the attachment of the extension of the triceps tendon. In all cases it is best to place the limb in extension on an anterior splint for about two weeks before fixing in flexion. When there is a wide separation of the fragment, after correcting the displacement, a pad under pressure should be applied over the triceps muscle just above the elbow to counteract its traction on the olecranon.

In fracture of the head or neck of the radius the fragment usually retains connection with the periosteum of the shaft and the treatment as adopted for fractures at the lower end of the humerus gives every satisfaction. If the fragment is loose and cannot be replaced and is interfering with the function of the joint, it is best removed.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Observations on the Diagnosis and Treatment of Movable Kidney. B. A. Thomas, M.D., (Jour. Urol., 1929, xxii, 603). Abstracted by Henry Sanford, L. S. G. & O., May 1930.

The author believes that many patients with movable kidneys fail to receive treatment that would save them years of invalidism, renal destruction, and even loss of life. Neglect or improper treatment of nephrotosis may result in persistent bacilluria or pyelitis, hydronephrosis, loss of renal function, or destruction of the kidney. Thomas was led to the study of the seventy-five cases which he reviews in this article by the common failure of external abdominal supports to provide satisfactory relief of pain, neuroses, gastric disturbances, and evidences of infection of progressive renal damage, and the complete relief afforded by nephropexy after months or years of troublesome disabling palliative treatment.

The cases reviewed are limited to those of acquired displacement of the kidney, either unilateral or bilateral, associated or not with general visceroptosis, in contradistinction to cases of congenital anomaly. They include cases of simple ptosis, unilateral or bilateral, treated palliatively or operatively, and cases associated with hydronephrosis, pyelitis, pyelonephritis, pyonephrosis, calculus, or tumor.

It was found in this series that the subjective symptoms presented are by no means an accurate indication of the mobility of the kidney. The degree of mobility can be determined only by urological examination.

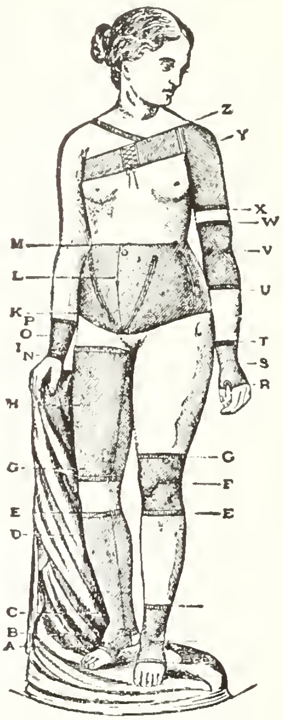
Thomas states that the number of ptosed kidneys demonstrated by pyelography which would remain undiagnosed without this procedure is incredible. Ureteral catheterization and pyelography are of value also because they enable the urologist to determine the presence or absence of renal retention, ureteral kinks, hydronephrosis, calculus, pyelitis, polycystic kidney, and tumors of the kidney, and to differentiate diseases of neighboring organs.

In the treatment of ptosed kidney the outstanding object must be not only the relief of subjective symptoms, but also the prevention of insidious destruction of the kidney by hydronephrosis and infection. Therefore, an exact standardization method of routine examination is necessary. In general, the therapeutic procedures may be grouped as palliative and operative. In the cases of persons who are predisposed to or have developed general visceroptosis, prophylactic measures such as proper diet and exercises designed to improve posture and muscular and organic vigor are very beneficial. The treatment recommended by Phillips cannot be surpassed. In the cases of patients who are underweight, confinement to bed for from a month to six weeks on a liberal diet is the first requisite.

Palliative treatment is indicated in mild cases in which the subjectitve symptoms are relieved by rest or abdominal support and periodical urological check-ups show no development or progression of hydronephrosis, infection, or any other pathological condition in the kidney. Palliative treatment is contra-indicated when: (1) subjective symptoms are not controlled by supporative appliances; (2) the threat of renal damage from urinary retention and infection is not controlled; (3) severe infection, calculus, or tumor of the kidney is present; (4) there is rotation of the kidney or a kink in the ureter, and (5) the kidney is movable to more than the first degree.

The author is of the opinion that the operative treatment of movable kidney has much to recommend it. He states that under no circumstances should the incidence of failure exceed 10 per cent. Surgical failures can be ascribed usually to faulty technique in fixation of the kidney, incomplete removal of fatty tissue between the posterior surface of the kidney and the lumbar muscles to which it is to be fixed, failure thoroughly to mobilize the kidney and ureter and free them from adjacent adhesions or fascial restrictions, and lastly, too short confinement of the patient to bed after operation. The patient should remain in bed for at least four weeks.

The method of fixation used by the author is essentially that described by Kelly. Three triple mattress sutures are used. The upper suture is inserted through the posterior capsule at the juncture of the upper and middle thirds of the kidney and the two others are placed at lower levels. The ends of the upper suture are brought through the intercostal muscles above the twelfth rib, and those of the lower two sutures through the lumbar muscles.



Tafel's "Verilite."

Seamless Elastic Stockings

Relieves and Prevents

Swollen Limbs, Sprains, Dislocations and Varicose Veins

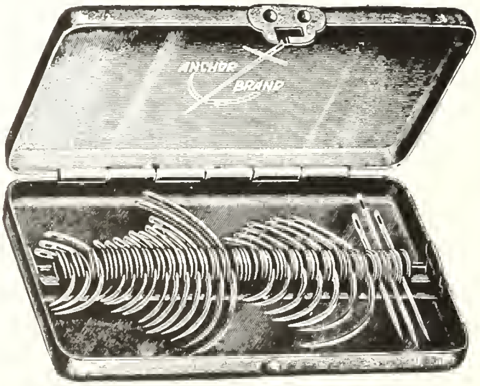
"Notair Top Adds Wear"
PATENTED
"No Other Can Give Such Comfort"

We manufacture
ARCH SUPPORTERS, TRUSSES
ORTHOPEDIC APPLIANCES, ETC.

THEO. TAFEL CO. **Nashville, Tennessee**

STAINLESS Steel ANCHOR BRAND Surgeon's Needles

A Needle You Can Depend On In All Emergencies



SPECIAL INTRODUCTORY OFFER!
This Splendid Nickel-Plated Needle Case FREE with 2 Dozen Assortment of ANCHOR NEEDLES, $3.00

ANCHOR NEEDLES are made of STAINLESS Steel and of course won't rust, tarnish and corrode. What is even more important, you will find them the toughest, sharpest, safest needle you ever used. They will not break or bend in use. We carry a complete stock at all times.

Your hospital should have an ANCHOR CABINET. Ask us about it.

Nashville Surgical Supply Co.

401 Church Street
NASHVILLE, TENN.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII JULY, 1930 No. 7

ADVANCES IN THE STUDY OF GASTRO-INTESTINAL DISEASE*

JOSEPH W. LARIMORE, A.B., M.D., St. Louis, Mo.

THE privilege of attending and speaking at this centennial meeting of the Tennessee Medical Society is greatly appreciated. It is a pleasure to follow the suggestion that I review some of the progress in the field of gastro-intestinal disease. Gastro-enterology has shared in the acceleration of all medical and surgical advance which has been so spectacular in the past three decades. The increase of medical knowledge in the final quarter of the last century from the fundamental discoveries in the realms of cellular pathology and of bacteriology gave this century a heritage upon which it has already very marvelously built. The scientific attainments in the field of medical knowledge and the technical improvements in the medical armamentarium have been so brilliant in recent years that much of the formerly dominant clinical method and much of the art of medicine has been overshadowed. Perhaps in this review of recent progress, the relative importance and usefulness of the new and the old may be indicated.

To the roentgen ray and to its adaptation to the needs of gastro-intestinal examination by the use of the opaque meal and the fluorescent screen, may be credited much of our increased clinical knowledge of the alimentary tract, and also much of the inspiration for the animal research that has increased our understanding of physiology and physiopathology. The handicap to abdominal diagnosis which has been so prominently and so often mentioned—namely, the abdominal wall—has been in part nullified by this means of indirect visualization of the canal. In the past century this was beyond the most fanciful of dreams. Roentgenology of the alimentary tract is now a procedure of daily routine and is in danger of becoming commonplace. It has revolutionized gastro-enterology and its advantages are so obvious that they need no extended discussion. Barclay (1) says that without roentgenological examination, the diagnosis of conditions in the abdomen was nothing more than intelligent guess work, but with competent and thorough roentgenological examination this was correlated to the facts of actual observation, and the deduction of an accurate diagnosis became a possibility. Mills (2) found that "the great and future interest lies not in such soul-satisfying rudiments as filling defects, but in the vast world of physiological reactions and anatomical and functional variations and changes." Diagnoses which were formerly made only at autopsy or at best at exploratory laparotomy, and in either case, in the terminal stage of the disease, are now of the greatest clinical importance and these diseases are discoverable at an early phase of their development when therapeutic attention is available and successful. Obstructions of the tract are found when yet partial and their cause

---

*From the Departments of Medicine and Radiology, Service of Gastro-Enterology, Washington University Medical School, St. Louis, Mo.

Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

greatly elucidated; diverticula of all segments are recognized and their care avoids the disasters which formerly resulted; cancer of the œsophagus, of the stomach, of the intestine and of the colon is readily differentiated, and often its localization or extension is indicated. Ulcers may be readily found. Duodenal ulcer has been proven to be approximately five times as frequent as gastric ulcer. Even where these diagnoses may be reached with great presumption by other methods, the roentgenological control can without refutation determine the condition and its details. Ulcer becomes with this help diagnostically classified as to its position, character, size and extension. The surgical care of ulcer is now made upon its definite attributes and from certain indications, and is no longer an exploratory operation. (Duval et al., 3).

Conceptions of the anatomy of the alimentary tract have changed since the roentgen ray made possible its study in the living organism. The size, shape, and position of the stomach have been found to vary with the physical build or bodily habitus of the individual and the low water-bottle stomach resting often in the true pelvis is now recognized as belonging to the extreme asthenic habitus, most usually feminine; the high transverse stomach lying high under the ribs and the ensiform belongs to the massive hypersthenic habitus, usually masculine. Between these extremes are the majority of persons of both sexes, who are of the sthenic, the hyposthenic, and asthenic habitus. The stomach in each of these types has a characteristic position and shape. (Mills, 4). The tonus of the alimentary tract and the motilities of the various segments vary directly with the bodily type. The colon is revealed as having between individuals a different length corresponding to the great variation in length found in studies of morbid anatomy. (Larimore, 5). These variations of the intestinal canal, discovered in the living subject, have, more than anything, helped toward the individualization in the study and treatment of gastro-intestinal disease.

From this roentgen study of abdominal anatomy (topography) there came with the first enthusiasm of discovery an over-emphasis of gastroptosis. It was not unnatural that these and other roentgen findings, which were at wide variance with the classical conceptions of abdominal topography, should have been considered as pathologically abnormal. But with the recognition, that the disposition of the abdominal organs depended upon the regional capacities of the abdomen as determined by the bodily habitus, it was found that their shape, their relations and their peritoneal attachments varied in consequence. The roentgen ray alone will not determine alimentary ptoses. Such diagnoses must be supported by the findings of physical diagnosis—the lordosis of the lumbar spine and an accompanying attenuation of the abdominal wall as in sedentary persons and multipara. The roentgen picture may show the drag of the stomach and less definitely that of the colon upon their attachments, and also the mobility of the viscera upon the posterior abdominal wall, but the findings of physical examination are more decisive for the clinical diagnosis of an acquired visceroptosis.

The motility of the stomach has only recently received in practice the attention it deserves. The motility varies directly with the bodily habitus (Mills, 6). The lesser grades of impaired motility (gastric motor insufficiency) are revealed as the accompaniments if not the basis for many of the alterations of secretion. The character of the gastric secretions is affected by the motor activity and varies with and because of hypermotility or hypomotility. The roentgen determination of gastric motility is most exact. The examination at the same time reveals the condition of the stomach as regards tonus, dilation (gastrectasis), retained content, and most usually determines the functional or organic nature of these conditions.

The addition of cholecystography to the roentgenological diagnostication of the alimentary tract and of the abdomen has been of an inestimable value. The discovery of Graham (7) that the gall bladder could be made opaque to the roentgen ray by certain atomic additions to those dyes having liver excretions has made it possible to demonstrate the functional condition of the gall bladder—its total lack of function, its state of usual or diminished function, with either of which may be revealed non-opaque calculi, or the residual deformities of past inflammatory disease. This test does not sweep aside the value or the necessity of clinical investigation of the gall bladder, although the largeness of its aid tends to encourage that dangerous error.

The clinical study of the gastric secretions has passed through several transformations. The significance of the hydrochloric acid secretion came into disrepute because of the direct diagnostic conclusions given to its clinical variations as determined by a single evacuation of the stomach at an arbitrary period (45 minutes) which was presumed to be the height of digestion, irrespective of the physical type or the condition of the subject. These were found erroneous and gastric analysis was discredited until the gastroduodenal tube (Einhorn, 8) revived interest and fractional sampling developed the graphic curves of secretion (Rehfuss, 9). These were also found not to be pathognomonic for disease and not to give a short cut to diagnosis. The small tube has, however, greatly advanced the study of gastroduodenal physiology and its alterations in disease. The hydrochloric acid of the gastric secretion has had a varied appreciation. It is secreted in one-half of one per cent concentration and can vary only downward (Carlson, 10). It cannot, therefore, have an absolutely physiological hyperacidity. The conception of hyperacidity exists clinically in a relative sense. Hydrochloric acid secretion is important in gastroduodenal disease because of its absence, of the improper prolongation of its action and less because of the level of its titration, although this reveals the status of general gastric function. Hyperchlorhydria is characteristic of duodenal ulcer but may also be found even with cancer of the pyloric area, and occasionally with gastric ulcer. But hyperchlorhydria is in no way characteristic of gastric ulcer as was formerly thought, although it may occasionally be associated; hypochlorhydria is the rule. The conception that a low acidity with gastric ulcer was an indication of syphilitic or tuberculosis etiology is found erroneous. Neither does increased acid secretion nor the higher titrations occur because of the stimulation of ulcer irritation. The stomach is found to have more acid after an ulcer is healed than when it is active (Hurst and Venables, 11). With the abandoment of the idea of pathognomonic conclusions from gastric analysis, the gastroduodenal tube has found its useful purpose in elucidating the altered physiology which accompanies disease, and in directing diet and therapy. Pavlov (12) demonstrated the appetite gastric juice and that the gastric secretion may be provoked by certain conditioned stimuli quite the same as is the salivary secretion. The conditioned gastric reflexes are of great importance in the efficacy of gastric work (Babkin, 13). In addition to the cephalic secretion, there has been demonstrated the gastric and the intestinal phases of gastric secretion (Ivy, 14). The stomach tends to maintain a definite optimum strength of the acidity (Fowler et al, 15, and Mintz, 16). The factors of dilution reduce its concentration from its secretory level (Gorham, 17). After secretion has been adequate for the food digested, the rate diminishes and the residual acid is combined by the mucus (McCann, 18). In the event of the failure of these factors of control duodenal regurgitation provides neutralization of the excess acidity. This occurs in dogs when the acidity has approached 3%. The condition of the pyloric sphincter may be indicated by the acid curve of fractional analysis (Bolton, 19). Achylia gastrica, which, with the method of single evacuation, appeared in 15% to 20% of persons, appears with the fractional sampling in but 4% to 10% directly proportional to age. The effect of histamine (Gompertz & Vorhaus, 20) in stimulating the oxyntic cells has been found to distinguish a functional from an atrophic or organic achylia. Achlorhydria cannot be clinically dismissed because only functional. As a feature of disease achylia is clinically more significant in other than in the gastric entities, namely in pernicious anemia, sprue, gastrogenous diarrhoea and in food allergy. Achlorhydria is not diagnostic of cancer and the level of acid titration allows no independent conclusions as to ulcer. The enzymes of digestion have received much study but as yet enter too little into clinical investigations. Trypsin is shown to behave like a monovalent cation and attacks only the protein anion, while pepsin behaves as an anion and attacks the protein cation. The nature of digestion is much more complex than this because multiple reactions are simultaneous. However, the different nature and possibly reciprocal nature of gastric and duodenal digestion are evident (Northrup, 21). It is but a step to conceive that the frequent failure of gastric digestion in achylia is a factor in food sensitization. All types of allergy show achlorhydria or lowered acid secretion (Eyerman, 22). Correction of this condition of digestion is often effective treatment for the allergic manifestations.

The direct diagnosis signifies of lactic acid, sarcines and Oppler-Boas bacilli has been disproven (Dobbs, 23). These are interesting findings of clinical microscopy in the late stages of obstructive gastric disease and owe their presence to the occurrence or absence of hydrochloric acid. The content of the normal stomach has very few bacteria and is, in over one-half of instances, sterile. The ulcer-bearing stomach does not show other bacteria than does a normal stomach. In association with gastritis, having increased or normal acid values, there occurs only the usual bacteria, but with lowering of the acidity, the kind and number of bacteria increase and with true achylia the hemolytic streptococci and staphylococci and the bacteria of the colon flourish. The bacteriacidal power of the stomach exists by reason of the hydrochloric acid (Henning, 24).

The extrinsic nerves of the stomach are the vagus and sympathetic, both of which carry motor and inhibitory fibers. Peristalsis is chiefly myogenic in origin coordinated by the intrinsic nerves. It varies in its rate of contraction according to the gradients of the tract diminishing from mouth to anus with local increases at the sphincters (Alvarez, 25). Formerly it was thought that the pyloric sphincter allowed gastric emptying by chemical control (Pavlov, Cannon). The pylorus is not controlled by hydrochloric acid. It is integrated into the peristalsis of the stomach and relaxes before the approaching peristaltic wave (Cole, 26; Luckhardt, 27; Wheelon and Thomas, 28). The pyloric tone keeps the sphincter closed when the pressure on either side is insufficient to overcome it (Klein, 29). Its opening is most favored by a fluid condition of the gastric chyme and is inhibited by irritation of the prepyloric mucosae especially by solid material (Klein, 30). Pylorospasm may be caused by irritation anywhere in the peritonal cavity (Hughson, 31). This may give rise to hunger pains. The most common source of this reflex is the appendix. Peristalsis is to a large extent myogenic in origin, and any movement is initiated, according to the gradients, from the most active and sensitive portion (Alvarez, 25). These are chiefly affected by toxic and reflex influences. The stomach is closed and lumenless in the fasting state except for the gas bubble. Tonus of its musculature creates a potential lumen of minimum capacity, which is collapsed by the intra-abdominal pressure. It expands first by the weight of food and later by accommodation of its nervous tonus mechanism. It is sensitive to the nervous influences of emotional states, fatigue, worry, anger and fright (Alvarez, 32).

Many conceptions have had to be put aside as the result of our increased knowledge of anatomy, physiology, chemistry and practice. The nutrient enema has been proven ineffective except for the absorption of the crystalloids, salt and glucose. The other nutrient portions of the enema—the eggs or milk or various other admixtures, even when "predigested," are not absorbed by the rectum or bowel. The enema tube cannot except in the rarest of cases be passed beyond the rectum and any administration of the high enema may occur only by transmission of the enema water-pressure.

The solution of the problems of gastric and duodenal ulcer has come much nearer. The diagnosis of ulcer has been all but perfected by the roentgen method of examination. Because these ulcers are so similar pathologically they have been grouped under the term peptic ulcer. However, they lie in distinct segments having different functions, and this has made their separation necessary for the consideration of etiology and treatment. Much confusion has also arisen because of the failure to distinguish between acute (or fresh) ulcer and chronic (or round) ulcer. Acute peptic ulcers produce no symptoms unless they give rise to hemorrhage or perforation (Hurst, 33). It is proven that the primary agent which causes the tissue defect is of less importance than the conditions which allow its conception or hinder its healing (Boas, 34). Experimental ulcer is produced with uniform success (Fremont-Smith, 35; Ivy, 36). Chronic stomach ulcer as found in man occurs only with impaired gastric motility (Morton, 37) and with an alteration of gastric chemistry (Mann, 38). There appears to be a graded tendency toward the formation of duodenal ulcer directly proportionate to the alkali deficit beyond the pylorus (McCann, 39). An ulcer can form only when the gastric juice is given the opportunity to destroy the tissue (L. Fischel). This attack may be permitted because of an inflammation, an apoplexy, a local circulatory interference or an erosion. Most ulcers occur in that mucus membrane which forms no acid (Leriche, 40). It is now known that there is no characteristic habitus for peptic ulcer, and that there is no association between ulcer and tuberculosis and syphilis. Chronic gastritis is asserted as a causative antecedent and constant association of ulcer of the stomach (Faber, 42). Duodenal regurgitation is the safety mechanism of the gastroduodenal segment for correcting casual and chronic gastric hyperacidity. It is not the essential manner of controlling the gastric acidity (McCann, 18). Pyloric obstruction obviates this mechanism and its surgical restoration is the chief benefit and aim of ulcer surgery (Olch, 43; Elman, 44). The pyloric disfunction or achalasia may be only from spasm which occurs with prepyloric ulcer and with certain lesser curvature ulcers and these simulate duodenal ulcers (Hurst, 33). Pylorospasm with hyperacidity may accompany a pyloric gastritis and give the pyloric symptom complex of hunger pain (Faber, 42). The pain of ulcer is of muscular origin and not due directly to the acidity. In duodenal ulcer it is due to sustained contraction of the duodenal bulb (Wilson, 45). It is much debated whether ulcer is a local disease or the result of a diathesis. Constitutional abnormalities, especially of the vegetative nervous system (Von Bergman, 46) and an acid tendency of the blood and tissue to an acid reaction (Balint, 47) are claimed as the background of ulcer. No correction of systemic conditions (by parathyroid (Moutier, 48), by vitamines (Harris, 49), and by alkalosis) influences the ulcer except as it thereby correct local surface conditions. Nothing is, however, more certain than that the tissues bearing a chronic ulcer are cytologically healthy, and that they require only the removal of interference to actively heal. This is accomplished by the adequate medical or surgical correction of the hindrance to normal control of the surface conditions of which the prolonged acidity or prolonged peptic activity is chief. These hindrances are the factors of chronicity of peptic ulcer (Larimore, 50) which may be enumerated as a faulty character and manner of diet, indulgences in food and drink, alcohol and tobacco, and coincident abdominal disease giving rise to reflex disfunction—appendicitis, cholecystitis, colitis and pelvic disease. It is shown that the healing of the ulcer lesion does not cure the syndrome and that this requires prolonged, if not thereafter constant observance of medical measures, to establish ordered and normal function of the ulcer-bearing segments. With the progression of the ulcer lesion, organic complicating factors develop and interfere with motility and with the control of the secretions. They are surgical in their indications.

The ambulatory treatment for peptic ulcer is now established (Fishbough, 51; Blackford and Dwyer, 52). The more radical cures with bed rest are necessary only for the acute complications of ulcer. The true ulcer cure must include a disciplined and revised habit of living. It must be more than a formal regime of diet or other temporary method of treatment. Tobacco has an undesired influence upon the pylorus tending to its spasm (Gray, 53) and it also increases the gastric secretions (Dixon, 54). The indication for operation based upon the economic condition of the patient is found fallacious with the success of the ambulatory management of ulcer cases. The organic impairments of gastric motility, whether from direct or secondary pyloric stenosis or from the muscular disability of the stomach due to callous and penetrating surgery as do also the catastrophies of ulcer, exsanguinating or repeated hemorrhage and perforation, the former only after preparatory treatment and the latter with the utmost promptness.

The relation of various abdominal diseases to each other is becoming more and more apparent. Appendicitis, peptic ulcer and cholecystitis have a significant statistical association (Larimore, 55). It is asserted that there is a pathological harmony in the right abdomen, which indicates a pathogenetic bond (Solieri, 56). Extension of infection of the appendix and right colon to the liver is demonstrated (Graham, 7). This extends to the gall bladder. Reflex influences from the appendix, colon and pelvic organs upon the stomach and the duodenum are shown (Rossles, 57), and have a place in the etiology of peptic ulcer. Hunger pain has been found to occur in 15% of cholecystitis cases and in 17.5% of appendicitis cases (Higgins, 58). Duodenal ulcer may be very closely simulated by a chronic appendicitis (Dowden, 59). Duodenitis is a sequella of other abdominal infection and gives the pyloric syndrome with hunger pain. It is being better differentiated by roentgenology (Johnson, 60; Kirklin, 61).

Cancer of the stomach characteristically occurs without a history of previous gastric disease. It may arise secondarily from simple ulcer (Ewing, 62). The incidence of this is variously stated as from 2% to 60% (McCarthy, 63). Surgical material in recent studies shows an incidence from 26% to 30%, and it is asserted that 10% to 20% of all clinically diagnosed ulcers are cancerous (Scott, 64). The healing of an ulcer observed roentgenologically evidences its benign character (Jordan, 65), but this healing should be prompt and continuous to be reliable; lessening of the crater may be false (Scott, 64).

The progress made in the study of the colon lacks little of being equal to that made with the stomach. The great variations in the total length of the colon (Bryant, 66), its segmental redundancies (Kantor, 67), its regional disposition in the abdomen are as dissimilar to text-book anatomy as are the variations of the stomach. Thêse are shown by enemas administered to the new born to be congenital (Larimore, 68). They are not, therefore, expressions of disease, although they do form the foundations for malfunction. The gastro-intestinal tube possesses a large degree of autonomy and the neuromuscular mechanism responsible for orderly peristalsis should be looked for in the bowel itself (Alvarez, 69). Constipation is recognized to be due more usually to an hypotonicity of the bowel rather than to an hypertonicity. It is, therefore, usually atonic in type. It may involve the right or left colon only, and may involve an hyperrotation and lengthened right bowel or a redundant distal bowel. The redundant color (White, 70) is an actual cause of disfunction and a definite entity, which is fairly common and frequently overlooked. It is more common in men than in women and in persons of vigorous physique. It is diagnosed only by the roentgen picture. The spastic bowel is seldom constipated and may show a tendency to diarrhoea. Many diarrhoeas are found to be adynamic and not due to increased peristalsis of the colon, as in achylia gastrica and sprue.

The micro-organisms which occur in the large intestine form an extensive list and include many different groups of bacteria. The intestinal contents should be regarded as material which is outside the tissues and separated by a mucous membrane which has developed a protective faculty which, in a state of tissue health, is adequte, even to reject many unusual pathological bacteria. The absorptive powers of the mucosa are peculiarly selective. Mucus is recognized as a most important defense against the invasion of organisms and the activities of the mucus cells are important in maintaining the health of the intestinal wall. Deficiency of vitamine A results in atrophy of the villi, and in a peculiar condition of the mucus cells, first overactive and subsequently atrophied. The demonstration that the intact mucous membrane of the obstructed intestine is an almost impassable barrier to the products of bacteria in the closed loop is a fact, the application of which is necessary to the problem of chronic intestinal intoxication (Cruichshank, 71). More evidence is being found in a large number of conditions of association to abnormal conditions of the colon and of the intestine. This yet indefinite connection is usually spoken of as toxic in endocrine imbalance, pernicious anemia with its diarrhoea and glossitis, cirrhosis of the liver, nephritis, arthritis, migraine and eczema. The conditions of the intestinal content are important but the condition of health of the mucosa is determining. The permeability of the intestinal mucosa to bacteria in vitamine deficient states has been demonstrated (Grant, 72) and plays an important role in determining the susceptibility of the canal to infection. This permeability allows for secondary infection of the bowel by its usual inhabitants, and also by pathogenic bacteria, as in tuberculosis of the colon, which, in the secondary type, occurs as a subepithelial infection rather than as a lymphatic infection. The infection of the bowel in idiopathic chronic ulcerative colitis occurs in this manner. Liberal vitamine rich diet without other direct therapy effects a clinical cure (Larimore, 73). The diplo-streptococcus is proposed as the specific organism of this condition and vaccines made with it are reported to effect cures (Bargen, 74). Similar results are reported with the combined use of vaccines and high vitamine diets (Fradkin and Gray, 75).

The importance of vitamines to the function of the bowel is established. The demonstrations by MacCarrison (76) of the influence of vitamine deficiency upon the tract has had a profound influence. The highly beneficial influence of adequate diet is demonstrated for mucous colitis and chronic ulcerative colitis. The clinical improvement of chronic diarrhoea by reduced diet is apparent rather than actual and the correction and cure has been found to occur better with the use of liberal diets containing vitamine-bearing foods in large excess, together with direct vitamine feeding as by cod liver oil.

The essential need of vitamines for the healthy function and condition of other parts of the alimentary tract is receiving more appreciation. In the experimental animal vitamine D is shown to be essential to the perfection and maintenance of the teeth (M. Mellanby, 77). Clinical observations lead to a similar conclusion for man. Deficiency of vitamine A has in rats been accompanied by cholesterol stones in the bile ducts (Fujimaki, 78). No such association has been shown for man, although their association to the nutritional variation of obesity is definite. Gastric atony has followed vitamine deficient diets (Rowlands and Browning, 79). Their relation to the ulcer syndrome has been proposed (Harris, 49).

The gastro-intestinal manifestations of food allergy are frequently overlooked and are a direct irritation of the mucosa or are part of a general reaction; the diagnosis is made by the history and by dietitic tests (Andresen, 80). The diagnosis of the allergic state and of the specific food is very difficult. Coincident other allergy—asthma and urticaria suggest the diagnosis.

Gastro-intestinal dietetics are becoming simplified and although there is still much to be desired in the way of accurate knowledge of dietetic questions, the burden of traditional conceptions which have allowed voluminous treatises to be written on practical dietetics, is being lessened. The present effort is to correct and bring the function of the tract to a tolerance of a large and varied diet which has ages of human experience to support it rather than to lower the diet to the lessened and altered function. Dietetic studies tend to confirm the efficacy of traditional habits of diet and to criticize much that has departed from these precedents in the preservation, distribution and consumption of foods.

The advances in the methods for the study of gastro-intestinal disease have changed the procedure of gastro-intestinal practice. A discussion of what now constitutes an adequate examination of the alimentary tract is perhaps pertinent. The necessity for the use of roentgenology, fractional analysis, duodenal drainage, proctoscopy and oesophagoscopy may be considered. But, first, it must be recognized that any of these methods is only an accessory means of investigation. They are too often resorted to immediately and directly from a gastro-intestinal complaint in spite of the fact that eight per cent of patients seen in any general medical clinic will complain of symptoms referable to the gastro-intestinal tract regardless of their disease (Piersol, 81). The history and physical examination are deferred, or are omitted, which is more serious. A detailed history is of greater value than any other portion of the investigation to the diagnosis of stomach and intestinal disease. In no other specialty of medicine is it more important. When properly secured, it truly reduces other measures to their ancillary position. This great direct value of the anamnesis is added to by its indirect value in giving purpose to the use of other methods and in giving better interpretation to their results. The anamnesis of alimentary disease has developed extensively by the broadening of interpretation from facts discovered through the special methods of examination. The knowledge of physiopathology, which is in no procedure more exemplified than in the taking of a patient's history, is one of the great advances of these facilities of examination. The adequate anamnesis must develop the several complaints of the patient and ascertain their duration and manner of onset. The intermittent or constant course of the syndrome is of importance. Pain must be analyzed for location, extension and transmission, for its associations to the periods of recurrent function of alimentary segments, for its nature, severity, duration and its manner of relief. Discomforts are distinguished from pain but similarly analyzed. Alterations of gastric function—belching, regurgitation, nausea and vomiting need to be described in detail to ascertain their organic origin or their intrinsic or reflex functional nature. There is scarcely any organ or system of the body that may not present digestive symptoms. Food habits, intolerances and limitations suggest and clarify specific conditions, or indicate definite chemical and motor derangements. Diet may account for a loss of weight which would otherwise be misleading in its inferences. Bowel conditions are essentially dependent upon the history for their solution. Much too often the terms constipation and diarrhoea are allowed to characterize the bowel status and then remain unexplained. No other terms vary so much in the meaning given to them. And the conditions are so often accepted without information as to the nature of the stool. The patients' statements suggesting jaundice, tarry stools and hematemesis, may be confirmed by the history of connoted occurrences such as choluria, acholic stools, yellow sclerae and the symptoms of hemorrhage—faintness, perspiration, thirst and pallor. An adequate history is seldom given unaided by any patient regardless of degree of education or culture. The knowledge of disease and its accompaniments reside in the clinician and is alone the basis for developing the symptoms and course of any condition. The patients' phraseology must be interpreted carefully. Sometime perhaps a glossary of the terms, which patients use, and the medical meanings may be written. The terms "gas" and "indigestion" will be found to include in lay-parlance almost all the disturbances to which the abdomen is heir. But diagnostic results justify the patience necessary to overcome the irrelevancy, confusion and stupidity of any patient.

Physical examination of the abdomen has notoriously had a paucity of abnormal findings, yet the importance of any positive findings is increased by that fact, and the lack of findings is far from being insignificant in value. It is equally essential for diagnosis and especially for prognosis to determine the presence or the absence of distention, rigidity, visible peristalsis, enlargement of the liver and spleen, fluid, hernia and palpable masses. Vomiting, hematemesis, pain, diarrhoea, jaundice, rectal bleeding always demand physical examination of the abdomen and it should be a rule to repeatedly examine the abdomen for each recurring uncertainty of diagnosis or of progress. Yet any of the enumerated symptoms and fiindings indicate the use also of one or of several of the accessory measures of examination.

This brief review of the importance of the anamnesis and the physical examination is imposed upon you to give emphasis in this paper describing the advances in the study of gastro-intestinal disease, to the fact that there is a tendency in practice for these essentials to be overshadowed by the newer methods of examination. The new methods require that their use and that the value given to their results be tempered by a thorough clinical knowledge of the patient, which may be gained only through the taking of a detailed history and the making of a complete general physical examination. The roentgen examination should be resorted to only after the history and physical examination have given form to the problems of diagnosis and treatment.

The roentgenological serial examination should include the entire tract, and is best done when fluoroscopic and film observations are made at the initial ingestion of the opaque meal, at six hours afterwards, at twenty-four hours afterwards, and later with an opaque enema. It must be remembered that the roentgenogram of the alimentary is a single photograph of a cinematographic performance. Into this routine may be brought more frequent observations, with multiple films made in varying positions, and with additional oesophagus, stomach and duodenal observations by secondary ingestion of the opaque meal. The great importance of the opaque enema has been emphasized by Mills (82). The examination of a segment of the tract merely to confirm clinical deduction is not good practice except as emergency procedure. From among the considerations which make the complete rather than a segmental examination advisable are the fact that the motilities of any segment of the alimentary tract can be judged, especially in their minor alterations only by knowing the motility of the proximal and distal segments and such motilities are important in the diagnosis of intestinal tuberculosis, duodenal stasis, colitis and typhlitis; and that multiple diseases often exist such as the abdominal triad of peptic ulcer, appendiceal disease and cholecystic disease. It follows that cholecystography should be a part of any complete gastro-intestinal examination. It cannot be gainsaid that the intravenous method is the better. It should be used whenever cholecystitis is clinically suspected; that it can or should be used upon each and every gastro-intestinal patient, those with clinical problems apparently other than of gall bladder, is not tenable. However the examination of these patients may be made complete by the use of oral cholecystography properly done and controlled. There will be by the oral method only a small minority of indeterminate cases in whom either a normal or a definitely pathological gall bladder is not demonstrated. These may then be given the intravenous examination.

The fractional gastric analysis is desirable on all patients and will add greatly to an understanding of the physiopathology of each case. The presence, prolongation, or absence of gastric secretion are facts of clinical importance. The occurrrence or absence of duodenal regurgitation and the time of its occurrence will give informaton as to the function of the pylorus and of the degree of its spasm or obstruction. Gastric analysis may be done on a day of the roentgenological examination without adding to the total time asked of a patient. It should be a standardized procedure and the measurement of the volume of secretion is of particular importance in addition to the determination of acidity (Bloomfield and Pollard, 83). Dietetics is particularly aided by a knowledge of the gastric acidities and motilities.

Proctosigmoidoscopic examination is easily accomplished and is often neglected or deferred for roentgenological examination. For investigation of the anus and rectum and lower sigmoid it is of the greatest efficiency and should be done upon the least indication. In the absence of these facilities it should be recalled that digital rectal examination alone has often saved a diagnosis. Digital exploration of the anus, rectum and pelvis (prostate or uterus and adnexa) is made in conjunction with the proctoscopic examination. Cancer, benign hyperplasia, ulcerative proctitis, amoebic infestation, simple and hemorrhagic proctitis are best or only determined by this examination and by examination of the tissue or exudate secured at the time.

Stool examination is essential for evidence of the digestion of articles of diet, of alimentary secretions, or parasites and of intestinal bleeding. The presence of blood in the stool must be differentiated as to its origin. Occult blood is of the greatest importance for its diagnostic and prognostic significance and for its therapeutic indication. Daily observation of the stools may indicate the type of a colitis, and differentiate between amoebic dysentery, sprue and neurogenic diarrhoea.

Oesophagoscopic examination is practiced by few gastro-enterologists. It is often a necessary examination and is secured by consultation from otolaryngology. The roentgenological picture will usually indicate fairly conclusively the nature of diverticula, of traumatic strictures and of malignant obstructions. Oesophagoscopy and biopsy are needed in addition to determine the primary or secondary character of cardiospasm, and to differentiate between fusiform contractures due to malignancy, syphilis or simple oesophagitis, and between the dysphagia of pharyngeal paralysis and high cancer.

The conception that any of these special examinations should be entered upon and practiced as an independent puzzle, unembarrassed by knowledge of other data, is unfair to the nature of scientific deliberation. It is improper for the gastro-enterologist to enter upon a special examination without the anamnesis and physical findings. It is equally unfair to the patient that special examination by consultants, especially roentgenology, should be requested without offering clinical data; and in hospital or group practice, the division of labor should not allow any segregation of information. A large leaven of clinical judgment must be added often to the sum of all findings in order to secure to the patient the correct and full benefit of these examinations. Diagnostication will reveal in only a portion of all cases a disease entity which has impersonal and abstract indications for treatment. Medicine continues to find the acme of its achievements in the art of practice.

BIBLIOGRAPHY

Advances in the Study of Gastro-Intestinal Disease

(1) Barclay, A. E.; Discussion, Brit. Med, Jour. Nov. 24, 1928.

(2) Mills, R. W.; Am. Jr. Roent. ix, No. 4, 199-223, April, 1922.

(3) Duval et al; Rad. Clin. du Tube Digest., Masson et Cie, Paris, 1927.

(4) Mills, R. W.; Am. J. Roent., 4:155, 1917.

(5) Larimore, J. W.; Am. J. Roent., 20-101-113, August, 1928.

(6) Mills, R. W.; Am. J. Roent., 9:731-734, November, 1922.

(7) Graham, E. A., et al.; The Gall Bladder and Bile Ducts, Lea & Febiger, 1928.

(8) Einhorn, Max; Medical Record, Oct. 9, 1909.

(9) Rehfuss, Martin; Jour. Am. Med. Ass'n. 71:1534, November 9, 1918.

(10) Carlson, A. J.; Physiol. Rev., 3:1, 1923.

(11) Hurst, A. F., & Venable, J. F.; Guys Hosp. Rep. LXXIX:249.

(12) Pavlov, I. P.; Work of the Digestive Glands, Lippincott, 1910.

(13) Babkin, B. P.; Physiol. Rev., 8:365, July, 1928.

(14) Ivy, A. C.; Am. J. Physiol., 74:639, 1925.

(15) Fowler, C. C., et al.; Jour. Am. Med. Ass'n. 2118, December, 1921.

(16) Mintz, S.; Arch.d.Mal.de l'App. Digest., etc., xix:591. May, 1929.

(17) Gorham, F. D.; Arch. Int. Med., xxvii:434, April, 1921.

(18) McCann, J. C.; Am. J. Physiol. 89:483, August, 1929.

(19) Bolton, C., & Salmond, R. W. A.; Lancet, 1:1230, June 11, 1927.

(20) Gomperty, L. M., & Vorhaus, M. G.; J. Lab. and Clin. Med. 11:14, October, 1925.

(21) Northup, J. H.; Harvey Lectures, 1925-1926.

(22) Eyerman, C. H.; Personal Communication.

(23) Dodds, E. C.; Lancet, CCXVIII:171, January 25, 1930.

(24) Henning, N.; Arch. f. Verdauung Krankh. 47:1, February, 1930.

(25) Alvarez, W. C.; The Mechanics of the Digestive Tract, New York, 1922, Hoeber.

(26) Cole, L. G.; Jour. Am. Med. Ass'n. 61:762, Sept. 6, 1913.

(27) Luckhardt, A. B.; Phillips, H. T., and Carlson, A. J.; Am. J. Physiol. 50:57, 1919.

(28) Wheelon, H., & Thomas, J. E.; J. Lab. and Clin. Med. 6:124, December, 1920.

(29) Klein, E.; Arch. Surg. 12:571, 1926.

(30) Klein, E.; Arch. Surg. 12:583, 1926.

(31) Hughson, Walter; Arch. Surg. 11:136, 1925.

(32) Alvarez, W. C.; Jour. Am. Med. Ass'n. April, 1929, XCII: 1231-1237.

(33) Hurst, A. F.; Gastric and Duodenal Ulcer. Oxford Press, 1929.

(34) Boas; Diagnostik und Therapie der Magenkrankheiten—George Thieme, Leipzig, 1925.

(35) Fremont-Smith, M., and McIver, M. A.; Am. J. Med. Sc. 177:33, January, 1929.

(36) Ivy, A. C.; Nebraska State Med. Jour. 14:137, April, 1929.

(37) Morton, C. B.; Am. J. Med. Sc. CLXXVIII: 65, January, 1929.

(38) Mann, F. C.; Am. J. Surg. 7:453, October, 1929.

(39) McCann, J. C.; Arch. Surg. 19:600, October, 1929.

(40) Fischel, L.; Munchen Med. Wchn. 75:1801, Oct. 19, 1928.

(41) Leriche, R.; Bull. et Mem. de la Soc. Nat. de Chir. Feb. 6, 1929.

(42) Faber, K.; Arch. f. Verdauungs Krankheiten, XLIII:135, March, 1928.

(43) Olch, I. Y.; Arch. Surg. xvi:125, January, 1928.

(44) Elman, Robert; Arch. Surg. XLIX:34, July, 1929.

(45) Wilson, M. J.; Arch. Int. Med. 41:633, May, 1928.

(46) VonBergman (quoted by Boas (34), Pg. 446).

(47) Balint, R.; Ulcus Problem und Saurbasengleichgewicht, Berlin, 1927.

(48) Moutier, F., and Camus, L.; Arch.d.Mal.de l'App.Dig., XIX:37 December, 1929.

(49) Harris, S.; Dis. Tr. Am. Gastro-Enterol. Ass'n., 1924.

(50) Larimore, J. W.; The Factors of Chronicity in Peptic Ulcer—To Be Published in the Jour. Missouri State Med. Ass'n.

(51) Fishbough, C.; Trans. Am. Gastro-Enterol Society, 1927.

(52) Blackford, J. M., and Dwyer, M. F.; Tr. Am. Gastro-Enterol. Ass'n. 29:112, 1927.

(53) Gray, I.; Am. Jour. Surg., VII:489, October, 1929.

(54) Dixon, W. E.; Lancet, 2:881, October 22, 1927.

(55) Larimore, J. W.; Surg. Gyn. and Obst. Pg. 59-64, January, 1930.

(56) Solieri; Mit.a.d.Grenzgebieten der Med. und Chir. 40:359, 1927.

(57) Rossles; Mit.a.d.Grenzgebieten der Med. und Chir. 25:766, 1925.

(58) Higgins, W. H.; Jour. Am. Med. Ass'n. 82:599, 1924.

(59) Dowden, J. W.; Brit. Med. Jour. 2:1066, December 10, 1927.

(60) Johnson, T.; Southern Med. Jour. 21:1031-1034, December, 1928.

(61) Kirklin, B. R.; Radiology, 12:377-381, May, 1929.

(62) Ewing, J.; Ann. Surg. 67:715, 1918.

(63) MacCarty, W. C.; Surg. Gyn. and Obst. 10:449, 1910.

(64) Scott, W. J. M.; Surg. Gyn. and Obst. 46:199, 1928.

(65) Jordan, S. M.; Jour. A. Med. Ass'n, 93:1642-1648, December, 1929.

(66) Bryant, J.; Am. J. Med. Sc. clxvii.499, April, 1924.

(67) Kantor, J. L.; Am. J. Roent. and Rad. Ther. xii, 414, November, 1924.

(68) Larimore, J. W.; Ann. Clin. Med. Vol. 5, No. 5, November, 1926.

(69) Alvarez, W. C.; Proc. Staff Meet. Mayo Clinic, 4:205, July 3, 1929.

(70) White, F. W.; Med. Clin. N. Amer., viii, 1611-1633, 1925.

(71) Cruichshank, John; Brit. Med. Jour, 3534: 555, September 29, 1928.

(72) Grant, A. H.; Jour. Infect. Diseases, 39: 502, Dec., 1926.

(73) Larimore, J. W.; Jour. Am. Med. Ass'n. 90:841-844, March 17, 1928.

(74) Bargen, J. A.; Arch. Int. Med. 43:50, January, 1929.

(75) Fradkin, W. Z., and Gray, I.; Jour. Am. Med. Ass'n. 94:849, March 22, 1930.

(76) MacCarrison, R.; Studies in Deficiency Disease—Hodder & Stoughton, London, 1921.

(77) Mellanby, M.; Editorial, Lancet, February 15, 1930.

(78) Fujimaki; From Jour. Am. Med. Ass'n, Editorial, 88:1080, 1927.

(79) Rowlands, M. J., and Browning, E.; Lancet, 1:780, January 28, 1928.

(80) Andresen, A. F. R.; Tr. Am. Gastro-Enterol. Ass'n, 1928.

(81) Piersol; Trans. Am. Gastro-Enterol. Ass'n, 1928.

(82) Mills, R. W.; Am. J. Roent. 11:487-503, June, 1924.

(83) Bloomfield, A. L., and Pollard, W. S.; Jour. Am. Med. Ass'n, 92:1508, May 4, 1929.

THE HEART IN INFECTIOUS DISEASE*

W. H. Witt, M.D., Nashville, Tenn.

IT IS only too well known to this audience that in the last thirty years, the heart and its diseases have acquired a prominence in medical thought and, as a consequence, in medical literature that was entirely unknown before that. The introduction of the Electrocardiograph and its most instructive disclosures of cardiac physiology and pathology, a new evaluation of the work of the Polygraph, but probably more important than either—the insistence, by Mackenzie particularly, that careful clinical observation is sufficient for the interpretation of the great mass of pathological phenomena of the circulatory organs, has led to a practical re-writing of the chapter on Heart Disease, to a better understanding of the scope and the limitations of therapeutics, and, what is very important, the essential harmlessness of certain cardiac irregularities and certain cardiac murmurs. It is particularly gratifying to know that by careful observation, the practitioner, no matter how far removed from so-called instruments of precision, has it in his power to properly interpret such phenomena as Auricular Fibrillation, Premature Systoles, Paroxysmal Tachycardia, Pulsus Alternans, Pulsus Bigeminus, and to say with much authority whether a given murmur is of little or much significance.

No apology is needed for the great prominence that Cardiology has assumed. The high death rate from cardio-vascular disease is sufficient impetus to urge us to learn what is available and what has recently become available is sufficient impetus for the restatement of the great mass of symptoms, physical signs and treatment that has taken place. How much is yet to be learned is too painfully apparent and how limited is our therapeutics, especially in certain tragic emergencies, is known to every practitioner before me.

The bulk of the literature of recent years has taken account of cardiac physiology, cardiac irregularities, angina pectoris, and the causes and evil results of high blood pressure. From the angle of therapeutics, there has been an effort at a revaluation of Digitalis and the proper method of using it. All these are matters of the greatest importance and justify the practicing physician's effort to let no real advance escape him.

It is my purpose, however, to discuss the heart and incidentally the general circulation as they appear to be problems in the course of certain infectious diseases.

It is an interesting thing, and one that should not be lost sight of, that of all the infectious diseases that poor man has to contend with, there are only three that commonly make a specific attack on the essential structure of the heart. These three are Rheumatic Fever, Syphilis, and Diphtheria. In these three, safeguarding the heart becomes a matter of concern from the day of diagnosis. In syphilis, it rarely reaches the status of an acute clinical problem till many years have elapsed—probably an average of eighteen, but in Diphtheria, the end may come early and with tragic suddenness. In Rheumatism, a death in the acute attack is rather rare. It comes most often in a repeated acute attack or after years of semi-invalidism, after the infectious manifestations have been long healed. In these diseases, the care of the heart is demanded by the condition of the heart muscle—as in Diphtheria or Rheumatic Fever, or by reason of interference with its blood supply as in Syphilis—all without concern for other more distant pathology.

There are other infections, however, in which the support of the heart and the general circulation become problems of great magnitude, but by virtue of complications rather than by virtue of the disease itself. This applies to Small-pox, Typhus, Measles,

---

*Read before the Tennessee State Medical Association Centennial Meeting, April 8, 9, 10, 1930.

Whooping Cough, and Influenza, and the complication commonly placing a strain on the heart is Pneumonia. The problem then becomes that of caring for the heart in Pneumonia—which will be discussed in more detail later. Influenza appears to occupy a position a bit different from the other infections, in that, apart from complications, the bacteria or toxins of the disease, whatever they are, often seem to attack the heart muscle and in some instances there develops a genuine endocarditis.

In certain other infections, however, the circulation is only an incidental problem, and of secondary importance compared with the general state of the patient, and in which it is poor judgment on the part of the physician to project it into place of prominence. This applies, but not with entirely equal force to Typhoid Fever, Tuberculosis, and septic conditions of all kinds, including septic endocarditis. The heart in these diseases with the possible exception of Typhoid Fever should not be the special object of therapeutic attack. It is only too common to find patients suffering with these infections being given digitalis or other supposedly helpful cardiac stimulants simply because the pulse is fast or the blood pressure is low. I would not contend that in the course of these troubles there may not be emergencies in which some rapidly acting stimulant, such as Ammonia or Whiskey may not be of service. In fact, I am quite sure they are helpful, although no doubt, rarely life saving. But to give cardiac stimulants regularly because the pulse is fast and weak is poor practice. What these patients need—and of course, what cannot always be supplied them, is more food, or more water, more fresh air, better nursing care, more sleep—and a less severe type of infection. In the case of Typhoid Fever, we have made a definite progress in the more liberal feeding and in the more liberal use of cold water, internally and externally. To allow these patients to become starved out and dehydrated and then depend on cardiac stimulants and such deceptive preparations as liquid peptonoids and panopeptone to pull them through is to be deprecated. I say this with full appreciation of the fact that not all typhoids will take food and water. Some of them are intensely toxic and do not respond to the nurse's entreaties. Whether such a patient can be safely managed with the duodenal tube has not come within my experience, but I have so conducted others to recovery whose condition was very similar to the highly toxic typhoid.

Similarly in Tuberculosis and in septic fevers, the battle, if it is to be won at all, is to be won along the lines of food, fresh air and good nursing; and whatever impairs a patient's appetite or digestive power cuts down the amount of food taken and just that far militates against recovery. Furthermore, there is a limit to a sick man's tolerance of being disturbed for medicine or food, and if he has to be annoyed every two hours for something out of a bottle, he is going to have little zest, mentally or gastrically, for food and drink. And sleep, nature's great restorer, loses its opportunity to "knit the raveled sleeve."

Because of the fact that in the course of a fatal or a less severe attack of an acute infectious disease, the pulse is rapid the tension low and often irregularities occur and either pallor or cyanosis ensue, we are inclined to attribute the very evident circulatory failure to a disease of the organs of circulation—especially the heart—much as we do in the common chronic cardiac conditions. We fail to recognize the fact that the failure of the circulation in such cases is only a manifestation of a general organic dissolution, induced by a widespread infection or intoxication involving not only the blood, the vasomotor controlling structures and the heart, but even the liver and at times the suprarenal glands. Such a consideration being always in mind serves to suggest to us both the rationale of therapy and its probable limitations as well.

There is interest and some clinical value in a knowledge of just what pathological changes take place in the heart in some of the more important infections that will be considered. For this, I shall draw on Ivy

Mackenzie's chapter on this subject in the Oxford Medicine, the most detailed presentation with which I am acquainted. It is particularly in Diphtheria, to a less extent in Typhoid Fever, that among other changes, there is an involvement of the contracting elements of the heart, while in Rheumatic Fever, there is more a fibrositis, an infiltration of the tissues about the muscular bundles, as well as the well known subendothelial nodules. Thus, in Diphtheria, more vital tissue is affected and if marked, death is likely, but if not fatal, complete restoration soon occurs. This is also true of Typhoid Fever. But in the different pathology of Rheumatism, there is a tendency to incomplete recovery and a subsequent crippling.

In Pneumonia, says Mackenzie, Scarlet Fever, Small-pox, and Typhus, the myocardium may possibly be affected by toxic agencies, but there is no anatomical evidence to show that myocarditis in the sense in which the term should be implied occurs in these diseases. There are various manifestations of circulatory disturbance. The sounds may be impure and soft, but the probability is that these abnormalities are the transient effects of the toxins of the infection not only on the heart itself, but on the regulatory system of the circulation as a whole, and not due to any structural alteration of the myocardium comparable with the lesions which are characteristic of myocarditis as described in Diphtheria and Rheumatism.

Other authors report over 50 per cent hearts normal in patients that have died of Pneumonia. It is quite true, however, that rare instances we have a true endocarditis of Pneumococcus or Scarlet Fever Streptococcus origin.

From the clinical standpoint it is well to remember that when actual involvement of the Endocardium, Pericardium or even the heart muscle supervenes in the course of an acute infection, the symptoms are few and probably in themselves insufficient to call attention to the heart. Precordial pain, dyspnea or heart consciousness may occur—but are rather infrequent. Probably a tendency to pallor, faintness or restlessness are more common. Physical signs, however, are plain enough and should be looked for, especially if a patient otherwise progressing satisfactorily presents any of the above symptoms or in some way takes a turn for the worse. Endocarditis is probably present if a diastolic murmur develops or if a previously existing murmur changes its quality. A systolic murmur in itself is not very conclusive, but if it is loud, rough, or accompanied by a thrill, it probably means mischief. I would particularly call attention to a change in quality of a murmur already known to exist. The signs of pericarditis are usually clear cut when first occurring, but in the presence of many pulmonary rales and rapid breathing they may fail of detection. So also, pericardial effusion is very apt to be overlooked under the same circumstances. No doubt, many of the rather large effusions found at autopsy have rapidly increased in the last hours of life when too thorough examinations are unwise. Changes in cardiac rate and rhythm are of bad omen as of course are edema and other signs of congestive failure. But except in Rheumatic Carditis, the latter are not common. They do occur in a few cases of Diphtheria.

Before discussing the heart in Pneumonia, I shall refer in some detail to its care in Influenza, Diphtheria and Rheumatic Fever. I shall not discuss the Heart of Syphilis.

In Influenza, the care of the heart comes in for very definite consideration. The majority of cases in which this problem comes up will be either those cases that develop a pneumonia more or less extensive or those less understood cases, mostly in advanced years that recover from the acute attack but are left with more or less crippled circulatory organs for weeks or even for indefinite periods. There is only a limited number of cases that develop a genuine endocarditis. The pneumonia cases are to be managed very much as a pneumonococcus attack after the case is developed. I would warn against too much anodyne and probably depressant treatment in the early days of an attack of Influenza, when the demand for these is strong and the pneumonic features are not developing. It is in these cases, too, that morphia should be used guardedly. Influenzal pneumonia in middle aged or elderly people is a very fatal disease, and I have not much confidence in therapy.

These more insidious heart cases that follow or attend Influenza are of great importance as a little bad management may result in an early breakdown. The symptoms are rather different from those of ordinary heart failure and consist largely of palpitation, general weakness and tremor, but actual dyspnea and even some edema may rather easily be produced. In the more chronic, post-influenzal cardiopaths, the symptoms are not unlike those found in the so-called Soldier's Heart. Very evidently the pathology present is only partly affecting the organs of circulation. The entire organism has had a severe blow. Our chief effort is along lines of prevention of overstrain. And here comes an advantage of climate, in that the proper climate facilitates recovery from the bronchitis and cough that strain the heart. Sunshine is of great value and moderate exercise out of doors is good for the hearts of most of these patients. Fatigue is to be avoided. Fresh air, graduated exercise and time will restore many of this type of case, but some never recover their circulatory power. I am confident that small doses of strychnine help these cases. It is a fortunate thing that the after effects of Influenza are well known to the public, for whether the residual weakness be broncho-pulmonary or cardiac, or mental, we can reason with patients for a careful mode of life and to wait for the day of complete restoration. In recent years, I think there has been less tendency for influenzal patients to drag along with symptoms referable to the heart.

Only a brief word about the heart in Diphtheria. During the attack, there may be a gradual or sudden failure of the circulation—even to fatality. Whether the trouble is chiefly with the heart muscle or the nervous mechanism, it matters not—there is little we can do. Pathologists describe for us every variety of degenerative process in the heart muscle of this disease. When a serious state arises—probably posture—in other words, the scrupulous avoidance of sudden strain, is our best card. Absolute recumbency for days is indicated. Even then we sometimes underestimate the weakness of the heart and a child may succumb on slight exertion or without when he seems to be doing well. Careful clinicians have always recognized the importance of watching for slight irregularities in the heart action, urging in such a case strict recumbency. In those cases of post-diphtheritic neuritis in which the heart becomes involved along with a more general paralysis—we can say boldly—never give up. I have seen one or two such apparently hopeless cases recover that I keep up hope a long time. One, in particular, seemed to have a single good muscle—the diaphragm. Persistent recumbency—very little medicine—and time—may work a miracle.

We recognize Rheumatic Fever as an acute infectious disease of common occurrence that is attended with a bacterial infection of the heart muscles and valves. I do not mean to say that the other infections may not be so attended—but certainly they are not in a proportion similar to Rheumatism. Time will not permit any detail on the heart features of this infection. The main points are these—that, particularly in children, cardiac attacks are common—that only a moderate percentage of children having had, say three attacks of Rheumatic Fever, will have sound hearts—that the heart muscle as well as the valves is commonly involved—that the diagnosis of this complication is often difficult, a murmur and some dilatation not meaning that the patient may not come out with a good heart. In children, the joint features are often slight or absent. Recurrences are common. It is more to the point of our discussion that patients rarely die of the first attack of Acute Endocarditis of Rheumatic origin. They may become very ill with fast pulse and shortness of breath, etc., but they usually recover. They may be crippled but still live. The danger lies in recurrences. In the third or fourth attack or later they may succumb. As to treatment, probably opium, the ice bag, absolute rest and flat abdomen are our best aids. Then a long, slow, careful after treatment—so hard with children—and then tonsillectomy—to prevent, if possible a recurrence, and that none too dependable as statistics abundantly prove. In both Rheumatic Fever and Diphtheria, the best work is preventive. Not all will agree that large doses of Salicylates given early will go far towards shortening the attack of Rheumatic Fever, but many do—especially English physicians—and to that extent they hold that serious cardiac involvement can be averted.

In Diphtheria, early use of antitoxin is our hope to circumvent heart failure.

The so-called subacute endocarditis with fever and the various forms of malignant endocarditis are not essentially cardiac cases, but rather cases of pyemia, an important focus of which is in the heart. They do not die a cardiac death, and stand in no need of cardiac drugs.

I shall not discuss the heart of Syphilis, but pass to its consideration in Pneumonia.

Of all the infectious diseases, Pneumonia is the one in which the heart and its care has come in for most consideration, and an embarrassingly large number of papers have been prepared on this subject in the last ten years, including statistical reports that should teach us more than they do. We are here confronted, and usually rapidly, with a mechanical condition that places a burden on the right heart. We have a toxemia which may be very mild, or which may be overwhelming. We also have an anoxemia which contributes to the burden under which the heart and other vital organs have to struggle. As a blood stream infection is frequently present, it is clear that other structures than the lung may be the seat of attack. It is small wonder that both in theory and in fact the care of the heart becomes in many cases an acute problem.

The clinical management of Pneumonia involves two major considerations: First, how to modify the toxemia—the severity of the infection. This involves the so-called specific treatment by different sera and will not be presented. The second consideration is to safeguard the circulation by such means as we can command. As in all infectious diseases, but probably not so well established in Pneumonia—the care of the circulation is largely the care of the patient—the effort by various means to prevent a serious state of involvement. To that end, the value of sleep and mental quiet cannot be overestimated and must be secured, even to the use of moderate doses of opiates—morphine being the best in my opinion. This is particularly true when pain prevents sleep. When there is much distension, much cyanosis, or a tendency to bronchial involvement, morphine is not without danger and must be used with care.

An abundance of water has a value it is not necessary to enlarge on. Food is rather to be restricted than forced.

The proper care of the abdomen is of the greatest importance. Gaseous distension, intestinal paresis, in effect, is often an indication of severe toxemia, but it should be prevented if possible. I think two or three laxatives are safe during the course of a pneumonia and, with proper help and skill, repeated enemata may be given with very little risk. I have a genuine confidence in certain old-fashioned measures—the use of a mustard plaster twice a day and the application of the ice bag. Fresh air is another item that is neglected, because nursing a patient in cold air is difficult. But that is not a perfect reason for its too infrequent use. Fresh air, water, good nursing, sleep and the care of the abdomen are more tedious and less spectacular than the oxygen tent and the frantic administration of cardiac stimulants, but when combined they have great value. Given a reasonably favorable subject, and a not too violent type of infection, nothing else will be needed—or only rarely. Given a poor subject, and a toxic type of the disease, the common experience of the profession is that all our efforts are likely to come to naught.

In hardly any disease that we treat is the matter of prognosis so persistently to the front. The issue in the great majority of cases in only a matter of a few days and every sign or symptom leading to a favorable or unfavorable prognosis is eagerly observed and studied for its meaning.

F. T. Phillips, of Pittsburg, reported in 1926, 78 cases of Lobar Pneumonia, carefully studied, both from the ordinary clinical standpoint, and also by use of the Electrocardiograph, and the prognostic value of each discussed.

The clinical study took cognizance of the heart rate and its relation to the blood pressure, the quality of first sounds and second sounds, the presence of arrhythmia, so important in the view of Mackenzie as of bad omen. Also marked cyanosis and the presence of pulmonary edema were reporten on.

Of the 78 cases studied, 32, or 41 per cent, died.

Electrocardiograms were made on 31.

Of 23 showing abnormal electrocardiograms, 40 per cent died.

Of 8 showing negative grams, 2, or 25 per cent, died—only a fairly helpful prognostic sign in each group.

Of 31 following Gibson's rule—the blood pressure in mm. being less than the pulse rate—52 per cent died. A fairly good prognostic sign but by no means infallible.

Of 6 that had arrhythmia, 2 died—only fairly supporting Mackenzie's attitude that arrhythmia is of very serious import.

Thirty-two showed poor heart sounds as signified by a weak or non-muscular quality to the first and weak aortic and pulmonic seconds. Of these 32, 60 per cent died.

Of 7 with pulmonary edema, all died.

Of 7 with marked cyanosis, 5—70 per cent died.

The legitimate conclusion is that by the usual methods of study—the sense of touch and the ear and the eye—our prognosis is about as safely made as by more elaborate tests.

The value of Digitalis in Pneumonia has been a matter for discussion and difference of opinion for a long time and the unsettled state that yet exists is pathetic evidence that men of similar training, similar opportunities for observation, equal love of truth, honestly arrive at varying conclusions. One of our foremost cardiologists, Dr. Paul D. White, of Boston, reviewed this subject in 1927. I make some quotations from his article in the American Journal of the Medical Sciences.

"Clinicians have differed radically in their opinion of the efficiency of Digitalis in the treatment of Pneumonia. Mackenzie feels that it is of little benefit. Hare is not enthusiastic. Brunton finds that at high temperature, digitalis loses its power of slowing the heart through the vagus. Christian says, 'I see no advantage in the routine use of digitalis in Pneumonia. If fibrillation or cardiac decompensation occur, digitalis is very useful.' Gibson expresses similar views. On the other hand, Harlow Brooks says, 'It is our custom to give digitalis at the moment the diagnosis is made or even when it is suspected.' L. F. Bishop is equally enthusiastic." White, himself, is quoted as saying in 1921, "We are a people of fads and fancies and it seems to me that just at present the fad is the routine use of digitalis to avert heart failure in Pneumonia."

In 1926, Dr. White studied groups of 221 cases of lobar pneumonia treated over a period of five years in the Massachusetts General Hospital. One hundred and ten cases had no digitalis. One hundred and eleven had varying amounts of digitalis. Of those with no digitalis, 16 per cent died. Of those with more or less digitalis, 39.6 per cent died. The groups had about the same proportions of complications. Fifty per cent of each group was put on the danger list' within 48 hours after entering the hospital, indicating similar ideas of the seriousness of the cases. The "no digitalis" group averaged 39 years. The "digitalis" group averaged 46 years—a difference of seven years. Of the 111 receiving digitalis, forty, with an average age of forty, were digitalized according to modern conceptions, each patient receiving on an average 36 grains of digitalis in 3 to 4 days. Of these, four, 10 per cent, died. Seventy-one cases, average age 38, had digitalis haphazardly, and 56 per cent died. The four of the digitalized group that died averaged 62 years. The 41 partially digitalized that died averaged 44 years. White, while not enthusiastic, sees here some advantage in thorough digitalization according to modern views of large doses. However, it is plain to me that when forty people—average 40 years—have Pneumonia, and only four die, they have had a relatively mild type of Pneumonia. When 71 people—average 38 years have Pneumonia and over half die, they have had a severe type of Pneumonia or are very bad subjects, and the above statistics mean very little to me.

W. J. Stone, reviewing a large number of cases of Pneumonia cared for at a Base Hospital during the World War, claims a ten per cent mortality under full doses of Digitalis. These, too, were in the latter half of the year 1918, including the months of the epidemic of Influenza. His earlier mortality was much greater. This is quite at variance with my own and the experience of others that in the first eight months of 1918, the mortality from Pneumonia in the A. E. F. was low, while in the later months it was very high.

I am very sorry to admit that I have no definite views on the value of Digitalis in Pneumonia. What views I have incline toward pessimism. I give it and have given it in full doses, and have seen it given in more than full doses. We are encouraged by Dr. Christian to give it when there are irregularities such as would call for it in the ordinary cardiopath. In three recent cases when such a state existed, I gave or saw it given in full doses. As far as the pulse was concerned, there seemed some temporary improvement—but the patient—that was different—they all died. It is so easy to give Digitalis intravenously that we hardly care to ask if we may be doing harm. I see no objection to giving rather full doses for one or two days, but if no improvement occurs, desist. I rather incline to the use of Caffein—though fully conscious of its limitations. It may be given in moderate doses from the second or third day, and in fuller doses later.

Any view you may hold that this paper only tears down and does not build up, is hardly justified. Conservative therapeutics is just as much indicated as the so-called active therapy. The beast of burden is not best fitted for his job by prodding with the lash, but by the more constructive method of lightening his load and by keeping him fit through food, rest and kindly treatment. So it is with the circulation in the infectious diseases—the care of the patient—with all implied in that term—is better than cardiac stimulants. And this applies to those diseases in which the attack on the heart is a part of the infectious process—viz: Diphtheria, Rheumatic Fever and Syphilis.

DISCUSSION

DR. WILL T. FITTS, Jackson, Tenn.: As has been so well brought out by the essayist, the heart becomes a prominent factor not only in rheumatic fever, diphtheria and syphilis, but essentially in every acute and even chronic infectious disease, it is ever a potential participant in the morbid processes. It is only by constantly bearing this in mind that we are able to provide for our patients the adequate safeguard which they have a right to expect from our hands. Every disease accompanied by fever entails an added load on the heart, as evidenced by increased rate. Cardiac fatigue, to greater or lesser degree, physiologically ensues, and this in turn predisposes to vulnerability. However, fatigue alone apparently plays the minor role, as suggested by the long periods of good compensation seen in the tachycardias of tuberculosis and hyperthyroidism. The previous condition of the heart also may play only a minor role. It seems that the major role is played by the virulence of the infecting organisms and their toxins, together with whatever tissue predilection or elective localization properties they possess. It is by this hypothesis that one can best explain the rapid dissolution in some cases and the comparatively easy recovery of other clinically similar ones.

One might discuss the heart in infectious diseases under the three headings, in the order of their importance:

1. Prevention.
2. Early recognition.
3. Treatment.

Prevention should imply the rigid application of all the known measures of value along the lines of quarantine, isolation, immunization, not forgetting the removal of foci of infection, the proper diet, rest, play and sunshine, these latter especially in childhood. Early recognition implies the painstaking and frequent examination of patients in order to note the early and less prominent evidences of cardiac involvement, such as heart action out of proportion to the temperature, arrythmia, beginning dilatation, the appearance of murmurs, or change in the character of previously existing ones. Finally, under treatment, I would say that only a few drugs are recognized as having a definite place in the treatment of heart disease, and the use of these restricted to only a few conditions. It is reasonably doubtful if any heart with good compensation can be benefitted, or its later break be forestalled, by any drug we know.

Probably, after all, the simple, practical, and always available measures, such as rest of both body and mind, fluids, fresh air, etc., are our greatest allies. Of these, rest is perhaps the most important, with fluids more important than food, especially in the more acute and brief infections, such as pneumonia. Fresh air is of greatest importance in conditions associated with cyanosis. Oxygen has the same indications, and while worthy of use, is probably seldom, if ever, life-saving.

DISCUSSION

E. R. ZEMP, M.D., Knoxville: It is impossible to discuss Dr. Witt's timely paper in a manner that its importance deserves. He has brought to our attention once again, and it cannot be brought too often, the fact that prophylactic medicine has made tremendous advancements in the past few years, but that curative medicine is still marking time. He has also shown by describing the cardiac pathology in certain infectious diseases how absurd and futile are many of our modes of handling these conditions.

A large part of the medical profession seems to be suffering from the obsession that Digitalis and heart disease are united in holy wedlock, and that to separate them would be to commit an unpardonable sin. As a matter of fact so ill mated are these two that not only should a divorce be granted but the decree should be made absolute. What a sad commentary upon our present day enlightment it is for any writer to have to stress the importance of rest and diet in the treatment of disease. These two alone will do more to prevent cardiac complications, and to hasten recovery, than all the other factors we can bring into use.

In influenza many a poor devil goes down after the storm has passed because his life hoat (heart) leaked. In rheumatism many a patient with crippled heart owes his condition to the name of the disease. Did we but call it acute carditis our attention would be distracted from the joints and fixed upon the heart where it should be. In pneumonia our frantic efforts are usually centered upon a failing heart, but as Dr. Witt has said the cardiac symptoms are but a part of a general dissolution. With digitalis, or without digitalis, the mortality from pneumonia is about the same, and I agree with him that the varying percentage of deaths is but an expression of the severity of the infection or the lack of resistance on the part of the patient.

I sincerely hope that the hearing of this paper will arouse the intense interest on this subject it so richly deserves.

A RESUME OF HISTORY OF ECLAMPTIC THERAPY WITH REVIEW OF ONE HUNDRED AND SEVENTY CASES*

J. R. Reinberger, M.D., and P. C. Schreier, M.D., Memphis**

ECLAMPSIA has been a problem for many hundreds, probably thousands, of years. The Old Testament refers to the condition of Rachel, the wife of Jacob, in her second delivery, and according to Fair (1), it is reasonable to believe that she died from a severe toxemia or convulsions of pregnancy. In the writing of Hippocrates, the convulsive seizures are alluded to. It is from his native language the term eclampsia is derived. Kosmak (2) could find no references to the disease in medieval literature, other than a casual mentioning of it by Italian writers. One thing soon becomes apparent in the study of the history of eclampsia, namely, that from the earliest times to the present day, the question has always been—shall the patient be delivered immediately in order to relieve the convulsions, or should she be treated more safely with medical measures.

A specific discussion of eclampsia is found in 1668 when Mauriceau recommended free venesection and rapid delivery by version; but in 1697 Chamberlin (27) urged forceps as a better procedure. Amberg (2) in 1713 clearly describes a case, and Kosmak (2) in his monograph, *The Toxemia of Pregnancy*, quotes him in regards to his treatment as follows: "Phlebotomy in the arm immediately to eight ounces. A teaspoonful every morning of a nervous powder to be repeated in the afternoon at 4 o'clock and at bedtime. The patient had no more convulsions and was delivered of a healthful child." Thus we see a conservative attitude exemplified for the first time.

To the contrary, we find in 1775 and 1777 references being made to the radical treatment. Smyly's Textbook (2) reporting four cases of eclampsia with three recoveries following versions, and shortly afterwards, Madame Le Bousire De Coudray (2), chief midwife of Paris, said: "Absolute rest is essential for the control of the convulsions, and patience if the presentation is normal, unless she falls into a state of lethargy, with all of the resources of animal economy being exhausted with nothing left to assist in giving birth, that delivery must be made as promptly as possible."

The prodomal headache as a symptom of eclampsia was first recognized by Burns (2) in 1813. He insisted upon blood-letting, purgation and immediate delivery for the control of active convulsions, but opposed the use of opium. Immediate delivery was likewise advocated by Bard (2) in 1815.

The next edition to the therapy was in 1831, when Simpson (27) first used chloroform to control convulsions. Beginning about 1857 ether (3) was used for the same purpose, and in 1867 chloral hydrate was prescribed by Lieberich (4). About the middle of the Nineteenth Century veratrum veridi (27) was introduced by American physicians, and since then has been a favorite remedy in the southern states.

Towards the last of the Nineteenth Century opposing views were distinctly held. Campbell (5) urging opium and venesection, and Halbertsma (27) advocating Caesarian section. Veit (27) in 1887 perfected his ideas about the liberal use of morphine in repeated dosage, which spread rapidly to the largest clinics. In 1892 Duhressen (27) believed delivery was indicated and advised his method of incising the cervix to replace accouchment force. In 1900 Stroganoff (27) gave a distinct impetus to the conservative management by reporting his routine use of morphine, chloral hydrate and sodium bromide in 160 cases with only 6% mortality. However, some continued enthusiastic over the radical treatment, and in 1904 Sir Comyns Berkley (6) sought an answer to this perplexing situation by making a survey of the methods used by the leaders in England. He was unable to draw any definite conclusions, but was prompted to say, "Possibly eclampsia was like puerperal fever, a symptom of a number of separate and distinct diseases, and, therefore, the results of treatment might differ according to which variety one was treating."

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

**From the Department of Obstetrics, University of Tennessee.

In this country in 1905, a symposium at the Chicago Gynecological Society brought out opposing views. Reed (7) favoring preliminary medical treatment, then operative treatment if no response, thus combining the radical and conservative views in the management of a case and making it less dogmatic about what to do. Bacon (8) was more inclined to medical treatment and suggested oxygen as an additional remedy in order to combat the asphyxia. About the same time, a similar symposium of the American Gynecological Society found Newell (9), Peterson (9) and Harris (9) favoring immediate delivery, while Kerley and Cragin (9) favored medical treatment. The report from the Rotunda Hospital (10) in Dublin came out in this year, and gave the results of their conservative treatment for a period of 100 years. During the most of this time, they had relied upon purgation and venesection; however, in the latter years, morphine had been added, thereby reducing the mortality from 35% to 16.9%. Polak (12), De Lee and Winters (11) read papers in the next few years favoring the termination of pregnancy in the most feasible manner, indicating, however, a general trend towards operative intervention.

In 1913 Gustav Zinke (13) took the attitude of accepting the challenge of the advocators of operation, and in his article compared the various statistics showing at least to his own satisfaction that there was no justification for radicalism. He collected 588 cases treated conservatively with a mortality of 12% as against Peterson's report of 530 cases treated radically with a mortality of 18%. He concluded by saying: "It is not claimed that the above mode of procedure (conservatism) will be universally successful; but my experience impels me to believe that in those cases in which it fails, very little could have been expected from surgical intervention.

The question was argued pro and con through the next few years, and in 1922 McPherson (14) blazed the way for a wave of conservatism. Whereas he had been originally of the radical school, he now published his results from the modified Rotunda technique, reducing the mortality from 30% to 16%. Beck and Rice (15) reported similar views in the same year. To the contrary, Greenhill (16) reported a series of Caesarian sections under local anesthesia of 19 cases with no deaths, and also Furst (29) of 33 cases with 2 deaths.

The medical treatment, prior to the time, had been somewhat empirical, but with the development of bio-chemistry and laboratory usage a more scientific approach became possible. The researches ( ) with magnesium sulphate injections demonstrated its sedative, dehydrating and diuretic action which naturally suggested its use in eclampsia. Allen and Lincoln (17) injected it intraspinally, and in 1925 E. M. Lazard (18) used intravenous injections, reporting in this year the first series of 17 cases with one death. Dorsett (19) later used it intramuscularly, reporting 38 cases with two deaths.

The conservative attitude continues to be substantiated by Wilson's (20) report based on 247 cases in The Johns Hopkins Hospital between 1894 and 1924. One hundred ten cases were treated radically with a mortality of 22% between the years of 1894 and 1912; from 1912 until 1924 there were 137 cases treated medically with a mortality of 12%.

In the last few years, we find Stroganoff (21) again defending his routine. Titus' (22) interesting researches establishing the value of glucose as based on bio-chemical studies, and Schwarz and Dieckman (23) adding additional reasons for the use of large doses of glucose solution intravenously, based on blood dilution. Polak (24) has also changed his mind as to radicalism and says, "The treatment is essentially medical, surgery having a limited field."

From the Chicago Lying-In Hospital, Greenhill (24) publishes their results from a combined conservative radical treatment, inclining more towards the latter, with a mortality of 7%, and from the State of Alabama, Dubose (26) showing that Caesarian section under local anesthesia in his hands has given wonderful results. Thus, we see how a review of the literature reveals the development of the controversy, and how it continues to date. Possibly as suggested by Greenhill (25) other factors are involved than the mere emptying or non-emptying of the uterus.

The maternity pavilion in the Memphis General Hospital has been under the direction of one individual during the fourteen years from which our records are available. During that time, the director, Dr. P. W. Toombs, has sought to answer the question by giving a fair trial to the radical as well as to the conservative methods. With the close of 1929, it was realized that an equal number of years had been devoted to each method, and it seemed fitting to review and compare, so that conclusions might be drawn for further guidance. However, it is not the purpose of this paper to present the details of this study, nor the technique in the treatment of either series.

The total number of cases treated in this series is 170 and include the years 1916 through 1929. The gross maternal mortality was 42 deaths or 28.8%, and the gross fetal mortality was 54 deaths or 31.7%, prematures included. The series has been divided into the radical and conservative group.

RADICAL GROUP

The radical group includes those cases treated from 1916 through 1922. There were 60 cases with 19 deaths or 31.6% mortality. But as a matter of fact, 16 cases were not operated upon, leaving 44 cases actually treated by operative removal of the fetus. The reasons for not operating in the 16 cases are as follows: (1) Ten post-partum cases with 3 deaths; (2) three mild cases which required little or no treatment and cleared up; (3) three cases developing convulsions while the head was being delivered. If we eliminate from the series the 16 non-operative cases with the 3 included deaths, there remains 44 cases with 16 deaths, or a mortality of 36.3%, which is the actual mortality where operation may have been a contributory factor to the end results. While this has increased our mortality percentage, we feel it is the only way to procure figures that would substantiate or contradict this form of treatment.

It might be of interest to review the operative procedures employed and their end results in the above series: (1) 30 Caesarian section, 14 died; (2) 4 versions, 3 died; (3) 7 forceps, mostly low, 3 died; (4) 3 bag inductions followed by manual dilatation, no deaths. No conclusions can be drawn as to which operation is preferable. The fetal mortality was 18 deaths or 30%.

CONSERVATIVE GROUP

There were 110 cases in this group in the seven years from 1923 through 1929, with 30 deaths, or a gross maternal mortality of 27.2%. In order to compare with the radical series, we eliminate 18 cases that had some form of operative treatment, 3 of which died, leaving 92 cases with 27 deaths, or 29.3% mortality, in which only medical treatment was employed. If we exercise the customary privilege of eliminating moribund cases, we find 9 dying within six hours after admission, and in addition, 3 died from six to ten days post-partum of pneumonia. This reduces the number of deaths to 15 out of 80, or 18.8% mortality, actually to be considered as a fair estimate of the value of conservative treatment.

Further study shows:

(1) 92 cases treated conservatively with no operations as follows:

61 cases delivered normally and lived;
8 cases delivered normally and died:
19 cases undelivered and died;
4 cases undelivered and discharged as cured.

(2) 18 cases delivered by operation as follows:

3 cases delivered by Caesarian section and lived;
11 cases delivered by forceps and lived;
3 cases delivered by forceps and died;
1 case delivered by version and lived.

Time does not permit a detailed discussion of the 19 cases that died undelivered, which is of extreme importance in the consideration of the conservative treatment.

It is apparent that our study and review insofar as proving the merit of one procedure over the other is not conclusive. At once it is seen that our gross mortality is as high, if not higher than any reported series. By correction, the mortality in the radical group goes up from 28.8% to 36.3%, and in the conservative goes down from 27.3% to 18.8%. In spite of the fact that the uncorrected percentages are almost the same. This we are quite sure is because in computing the figures for the conservative series, it has been the policy of its advocates to remove cases which are considered moribund while on the other hand radical figures have been taken from only the operated cases with no elimination of moribund ones. We do not feel that this is the correct way to draw conclusions. The only reasons for making such corrections is to emphasize our point of view.

SUMMARY

It is not our intention to offer a new idea or to make a plea for any particular method, but rather to obtain from our study and review some suggestions that may be of benefit in the future care of our eclamptics.

(1) Eclampsia developing in patients who have even had incomplete prenatal care gave a much lower mortality.

(2) We are quite sure that eclampsia cannot be treated per se and the pregnancy ignored, as revealed by the fact that 19 women in our conservative series died undelivered. And of 40 cases developing postpartum convulsions only one died.

(3) It does not seem that any of the sedatives have any outstanding superior merit. Injections of magnesium sulphate bids to be a valuable adjunct drug in this category, but in our experience with 25 cases, its sedative action is not sufficiently uniform to be solely relied upon.

(4) Elimination, fluids and sedation, even from the most recent studies, are absolutely fundamental.

(5) The relative value of phlebotomy, veratrum veridi and nitro-glycerine to relieve the hypertensive crisis until other measures have had their effect, is still unsettled.

(6) Medical treatment is indicated in all cases. When it is ineffective or cervical dilatation fails, we have at least properly prepared the patient for a more favorable termination of labor.

(7) The bad results from operation, and the good results from medical treatment may hinge on the question of anesthesia. (Stander, 28).

(8) Vaginal operations are always attended by severe shock, not only from the operation itself, but from the necessarily deep anesthesia.

(9) When operation is decided upon, we are inclined to believe: (a) before the period of viability, vaginal Caesarian section under local, trans-sacral or spinal anesthesia is indicated; (b) where the cervix is not dilated, and bagging without anesthesia is not possible, abdominal delivery under filtration or spinal anesthesia is preferable; (c) rather than a deep anesthetic for version or forcep, we favor Caesarian section under local or spinal anesthesia.

(10) Where conditions are not favorable for proper hospitalization, medical treatment will give the best results.

CONCLUSIONS

In closing we can say that we feel that we are not justified in adhering strictly to either medical or surgical treatment. Our increasing knowledge of the bio-chemical disturbances co-incident with eclampsia, and our better understanding of physiological surgery suggests to us that every case should be first treated medically, and when prompt improvement does not follow, intervention is indicated providing the surroundings are favorable.

BIBLIOGRAPHY

(1) Fair: Am. J. Obs. & Gyn., 10:5, 746, 1928.

(2) Kosmak: Monograph on Toxemia of Pregnancy, 1922.

(3) Oliver: Bost. Med. & S. J., lvi, 3, 61, 1857.

(4) Garrison: History of Med.

(5) Campbell: Am. J. Obs., 9, 406, 1876.

(6) Berkely: J. Obs. & Gyn., Brit. Emp., 5, 263, 1904.

(7) Reed. Am. J. Obs., li, p. 331, 1905.

(8) Bacon: Am. J. Obs. li, 455, 1905.

(9) Newell-Peterson-Harris-Kerely and Craigin, N. Y. Med. J., lxxxii, No. 1, 1905.

(10) Harpe: J. Obs. & Gyn., Brit. Emp., 9, 102, 1906.

(11) De Lee: A. M. A. J., 56, 13.

(12) Transactions of Am. Gyn. Society, Am. J. Obs., N. Y., 66, 435, 1912.

(13) Zinke: Am. J. Obs., N. Y., lxvii, No. 6, 1065, 1913.

(14) McPherson: Am! J. Obs. & Gyn., 4-1-50, July 1922.

(15) Beck & Rice: Am. J. Obs. & Gyn., 6-6-667, June 1924.

(16) Greenhill: Am. J. Obs. & Gyn., Review of Literature, 1924.

(17) Allen & Lincoln: Am. J. Obs. & Gyn., 2-2-167, 1925.

(18) Lazard: Am. J. Obs. & Gyn., 2-2-178, 1925.

(19) Dorsett: Am. J. Obs. & Gyn., 2-2-227, 1926.

(20) Wilson: Am. J. Obs. & Gyn., 2-2-189, 1925.

(21) Stroganoff: Am. J. Obs. & Gyn., 2-6-756, 1926.

(22) Titus: Am. J. Obs. & Gyn., 15-3-303, 1928.

(23) Schwarz & Dieckman: Am. J. Obs. & Gyn., xviii, 4-515, 1929.

(24) Greenhill: A. M. A. J., 87-238, 1926.

(25) Greenhill: Obstetrical Literature (Chicago Lying-In Hospital—Eclampsia), Am. J. Obs. & Gyn., 15, 4-569, 1928.

(26) Dubose: Am. J. Obs. & Gyn., xviii, 5-653.

(27) Spalding: Amer. J. Obs. & Gyn., lxxii, 5-773, 1917.

(28) Stander: Amer. J. Obs. & Gyn., xii, No. 5, p. 633, 1926.

(29) Furst: Zenbralblatt fur Gynak, xlviii, p. 834.

(30) Melzer & Allen: Am. J. Physiology, xiv, 366, 1905.

(31) Peck & Melzer: A. M. A., vol. 67, p. 1031, 1916.

DISCUSSION

DR. SAM COWAN (Nashville): Mr. President and Gentlemen: I certainly have enjoyed Dr. Reinberger's resume of the treatment of eclampsia, and I have enjoyed his statistics. Practically all men who gather statistics on the treatment of eclampsia make this statement: that in the hands of the general practitioner the mortality is possibly lower, treated radically or conservatively.

We must not lose sight of the fact that the bulk of obstetrics is still done by the general practitioner, not only in Tennessee, but in America as a whole, and this calls two pertinent facts to our attention. The first one is that if the general practitioner does more obstetrics than anybody else, he sees more eclampsia. The second fact that occurs to my mind is this: Why should not the radical man be just as efficient in giving medical treatment, or possibly a little more so, than the general practitioner?

Over ten years ago, Dr. Slemmons of Harvard made an exhaustive study of the blood chemistry of several hundred cases of eclampsia, and at the close of his article in a review of those cases he made the statement that we would probably have to look somewhere else besides the blood for the cause.

However, in more recent years Titus, Dodd and Willetts have demonstrated this fact as regards blood sugar: that the convulsions that occur in eclampsia occur most frequently at the lowest level of the blood sugar, and that if the normal blood sugar level is maintained, convulsions are less likely to occur. That fact has been disputed by Stander and by some others.

Our findings at Vanderbilt Hospital coincide with those of Titus and Dodd, that those patients whose blood sugar levels reach below .60 as a rule will have convulsions.

Personally I do not believe that eclampsia is an indication for any very radical treatment so far as emptying the uterus is concerned.

Magnesium sulphate has proved disappointing except as an eliminant by mouth. Chloral hydrate, sodium bromide, veratrum veride, and other drugs have proved disappointing as sedatives. I believe opiates are about the only sedatives that we can depend upon.

In the last five years we have had fifty-five cases of toxemia of pregnancy hospitalized in Vanderbilt University Hospital. Of those fifty-five cases, seventeen have had convulsions. Our mortality in that series is about seven per cent.

There have been three Caesarean sections done in that series, because we cannot get away from Caesarean section in certain types of cases. One case on which we did a Caesarean section had a cardiac insufficiency and died about four days after operation from cardiac failure.

DR. M. S. LEWIS (Nashville): From this review of the various methods of treatment it must be apparent that we have as yet no satisfactory way of combating eclampsia. It is difficult to say in treating a disease in which the etiology is not clear just what the best procedure should be.

At present the most logical and most promising treatment appears to be one which is conservative, and only radical interference under local or spinal anesthesia should the conservative methods prove of no avail. One fact which should recommend this conclusion to us all is that conservative treatment may be carried out in the home with little added risk, whereas under such circumstances the danger from operative intervention is markedly increased.

Ideally all eclamptics should be treated in hospitals, but that is not yet possible and it should be consoling to the rural practitioner to know that he can when necessary treat his eclamptic in the home by medical means and yet be following the best medical teaching.

There seems to be very little to choose between the various conservative methods in vogue. They all give practically the same results in the hands of their exponents.

We at the Nashville General Hospital are using a little different method than thus far has been reported.

For the control of convulsions we are using Sodium Amytal 7½ to 15 grains in a 10 per cent solution, intravenously. This preparation thus far has been a specific in controlling the convulsions in eclampsia. Although our series are small, we have as yet no recurrence of the convulsions since using this drug. We repeat the Sodium Amytal when necessary if the patient becomes restless, either intravenously or intramuscularly, an hour or more after the initial injection.

After the control of the convulsions colonic irrigation is instituted with sodium bicarbonate one gram to the pint. This is continued until the return flow is clear and when possible one or two pints are left in the bowel.

Gastric lavage is then done and repeated until the return is clear and when completed two to four ounces of magnesium sulphate is left in the stomach. This lavage can be repeated two or three times.

Glucose 500 to 1000 c.c. of a 20 per cent solution is given intravenously two or three times in the twenty-four hours.

If the patient is in labor we may hasten labor by the use of the bag, if not in labor we do not induce our patients until they are completely out of shock, or in selected cases Caesarean section under local or spinal anesthesia. We are of the opinion that in primiparas with a non-dilatable cervix, it is not radical treatment to do a Caesarean section; it is radical conservatism.

We believe that the above treatment which we are now using is rational as it has the advantage of immediate control of convulsions, promoting diuresis and elimination. However, any conservative method which aims at control of convulsions, diuresis, elimination and delivery in most instances in a conservative way will give the lowest mortality.

DR. W. K. SHEDDAN (Columbia, Tenn.): Something over forty years ago I remember hearing Dr. Richard Douglass make the remark that the best treatment of eclampsia was its prevention. I haven't heard a word said in all this discussion about the prevention of it.

After an experience of fifty-two years in the practice of medicine and an experience of 1,553 deliveries in which I never had eclampsia, I long ago concluded that the prevention of it is far more important than the treatment, and if the pregnant woman is properly cared for, there will be no necessity for a great many of the treatments that are being advocated, either conservative or radical.

I am aware that we don't see all of these cases prior to the time they go into labor, but it has been my good fortune to be in a community where all pregnant women came under my care once prior to their delivery, and in the system of management that I advocated and usually advised people to follow were these things: regulated diet, hygienic and sanitary surroundings, the liberal use of water. And that is one of the things I want to tell all these men. Don't try to standardize everything, for God's sake! You've got an idea that you've got to standardize everything nowadays. Every woman and every patient is a law unto herself and must be handled and treated as an individual. I want to emphasize that.

DR. JAMES R. REINBERGER (Memphis): I certainly have appreciated the generous discussion. I might say that we had no intention in this paper of going into the treatment of eclampsia in detail, nor reporting our detailed study. We merely wanted to show that if we are not careful, that we become self-satisfied, and being self-satisfied we would not study our end results. That is what actually happened to us for a long time. In a meeting several months ago, I stated that our mortality was around 33% with the conservative plan, and my associates on the service said that it couldn't be so, but it was so; even higher. Our findings in this group prompted us to make a complete survey of both groups of cases.

I had hoped that the high mortality reported might provoke some criticism. I stated that I would not correct our mortality other than to show that it could be corrected to very low figures. We have a general mortality of 28%. We have tried the conservative treatment; we have tried the radical treatment. Strange to say that many good clinics report series with mortalities ranging from 2 to 10%. There must be something radically different in the types of eclamptics throughout the country.

Another point that I wish to stress is that you should not correct your mortality percentage if you expect to get the actual facts from your survey. I can correct the mortality percentage of any radical series and take out those cases which I considered moribund, and I believe that I will have an equal or even lower mortality than those reported in almost any conservative series. However, I want you to know that we were not attempting to draw any conclusions in this paper.

As regards anesthesia—we think at present that it probably is the greatest contributory factor that is lowering the mortality between the conservative and radical treatments. We feel that it is necessary to terminate cases that local or spinal anesthesia will give us better end results.

So far as sodium amytal is concerned, that it probably has some virtue, however, everything has been mentioned to control convulsions. If you will review the literature today you will find that everything has been used, and that nothing has been disposed of with any creditable factor behind it. Take veratrum veridi, for instance. Today almost everyone is opposed to it. In Cincinnati it is used by a few men. The fact is that there is not a case recorded to our knowledge in the literature where veratrum veridi has been proven to have caused death.

In closing, I might say that our treatment is elimination, fluids, sedation, and emptying the uterus when we feel that we are not getting the required results from the conservative treatment.

I again want to thank you gentlemen for your kind discussion, and trust that in the next series we can show you much better results.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1930

EDITORIAL

The report of the Judicial Council of the American Medical Association contains a fair statement of the status of affairs with respect to the subjects touched upon in the report.

The Council declined to comply with the request which was embodied in the Pusey resolution passed by the House of Delegates at the Portland meeting. It seems to us the Council took the only position it could take logically. It is not the function of our judicial body to enact regulations.

The entire report is reproduced here:

To the Members of the House of Delegates of the American Medical Association:

The amount of work that the Judicial Council has been called on to do since the last annual session has been unusually large and many of the questions with which it has had to deal have been of a most perplexing nature. The character of many of them indicates that the conditions of the times are tending to produce significant changes in the relations of medicine. Inquiries submitted to the Council involving the relations of one physician to another and the relations of the individual physician or of the organized profession to the public are constantly increasing in number and are becoming more complex in character. The development of industrial medicine, the activities of corporations in medical fields, the expansion of public health programs, especially those of unofficial agencies, the organization of so-called "hospital associations" and "co-operative diagnostic laboratories," the creation of funds and foundations concerned in some manner with medical practice or public health, the workings of compensation laws and many other factors have given rise to many new questions and have produced many perplexing problems of which final solution is not easily possible. To all of these coming to its attention the Council is giving earnest consideration and is attempting to be helpful in devising plans of action that will safeguard the integrity of the medical profession and contribute to the public welfare.

Co-operative Diagnostic Laboratories

In one or more instances concerns known as "co-operative diagnostic laboratories" have been organized in which practicing physicians are participating as "members." Information before the Judicial Council indicates that organization is effected in such a manner that control will lie in the hands of the promoters and directors of these schemes and that practicing physicians identified with them must pay for "membership." These physicians are then expected to refer work to the laboratories operated by the concern. As a consideration for such reference, the physician members receive from the laboratories compensation varying in amount with the amount of work referred. The Judicial Council is of the opinion that schemes of this kind are unethical and directly opposed to the interests of scientific medicine and of the public. This opinion has been transmitted to the state medical association and to the county medical society directly concerned, but without results.

Original Jurisdiction and Responsibility

The Judicial Council is constantly being asked to deal with matters over which it has no jurisdiction until they have come before the Council on appeal from decisions of the proper official bodies of state medical associations. Original jurisdiction over the acts and professional relations of members lies with the component medical societies, and it is the duty of these societies to institute and to carry out any corrective measures that may be indicated. The constituent state association from which the component county society receives its charter has original jurisdiction over the affairs of medical organization in its own state, and its powers and duties are clearly fixed in its constitution and by-laws, to which its own component county societies must subscribe. The Judicial Council cannot institute any action in a county or state having to do with the relations of one member with another, or of a member or groups of members with a county society or with a state association. If untoward conditions arise in a county it is the duty of the component society of that county to deal with them and this duty cannot be delegated to nor assumed by the Judicial Council.

The Judicial Council does have jurisdiction over matters pertaining to fellowship in the American Medical Association and has exercised such jurisdiction in many instances. The Judicial Council can and frequently does submit to constituent state medical associations information received by it concerning alleged acts of individual members or groups of members. The Council can and does offer to constituent state medical associations its studied opinion with respect to conditions that arise in a particular state or concerning organized movements that may affect the profession as a whole.

It is highly important and necessary to the efficient working of our splendid scheme of organization that every unit shall fully assume the jurisdiction that belongs to it and shall deal promptly and definitely, but with careful deliberation, with every situation that threatens to bring reproach on the profession or that offers opportunity for extending the worthy influence of our organization and for promoting the science and art of medicine.

PROPER PREPARATION OF CHARGES AND APPEALS

Our organizational law clearly prescribes methods to be used in dealing with matters of discipline. The law is written with proper regard for the rights and privileges of the individual as well as for those of the profession and the public. It is required that a hearing shall be given to any member against whom charges have been laid, and fair and definite methods of procedure are clearly set out. It is nevertheless true that in certain instances that have come under the official notice of the Judicial Council, charges made in cases that have come to trial have been so indefinite as to preclude the possibility of arriving at conclusions that could be legally justified. In some instances specific rules of procedure laid down in constitutions and by-laws have been entirely ignored or loosely followed. More than once preparation for appeals has been poorly made by both parties at interest, and official records have been imperfect to a degree that has made it necessary to arrive at conclusions and to announce decisions that might have been of a very different nature had due care been exercised in preferring specific charges, in the admission or rejection of evidence, and in following the authorized rules of procedure.

It is, at best, unfortunate that official action contemplating the application of discipline should have to be taken, but it is essential that the honor of the profession be zealously guarded and that the integrity of our organization be fully preserved. It is just as important that no injustice be done to any individual. That these ends be served, it is of the utmost importance that any society that finds it necessary to proceed against any member or any group of members shall see to it that charges preferred are specific, that rules of evidence are duly observed, and that legal methods of procedure are carefully followed. Appeals must be made in the prescribed form, and the records submitted to appellate bodies must be accurate and complete.

PROPOSED AMENDMENT TO BY-LAWS

In some states, the laws governing medical licensure permit persons who are not doctors of medicine to be licensed as physicians. Some persons so licensed have been admitted to membership in county societies. The Judicial Council respectfully proposes that Section 2 of Chapter XI of the By-Laws of the American Medical Association be amended so as to provide that no person who is not a doctor of medicine shall be permitted to become a Fellow of the Association.

CORPORATION PRACTICE

At the Portland session, in a resolution introduced by Dr. William Allen Pusey of Illinois and adopted by the House of Delegates, the Judicial Council was asked to submit to the House at this session "a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by industrial organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto." The scope of this resolution is so broad and the magnitude of the task assigned so great that the Judicial Council has found it impossible to comply with the request that a comprehensive report be submitted to this session. The members of the Council have attempted to study conditions affecting the practice of medicine, and the Council as an official body has sought to gather information and to secure expressions of opinion from qualified persons. It is perfectly obvious that to carry out the intent of the resolution it will be necessary to compile and digest a mass of information of such size that the accomplishment of the task is far beyond the capacity of the facilities of the Council.

Some conditions requiring study have been so lately created and are undergoing such rapid changes that quick appraisals cannot be made. Others now have purely local bearing and have no present national significance but may come to be of important interest to the entire profession. With respect to some of the matters covered by the Pusey resolution there has been no crystallization of opinion and it is doubtful that well considered judgment can be formulated. The Council will use its best endeavor to arrive at conclusions to be submitted to the House of Delegates at a future session that may serve as a basis of discussion that may result in the adoption of definite policies as those of the Association. In the meantime, it is desirable that component county medical societies and constituent state medical associations study closely conditions existing in their respective jurisdictions and that they be guided in offering or in withholding approval and co-operation in movements affecting medicine by conclusions based on such study. These societies and associations are respectfully requested to provide the Judicial Council with all available information that may be used to help the Council in carrying out, as far as it can, the expressed wishes of the House of Delegates.

With regard to the practice of medicine by corporations, it is the opinion of the Judicial Council, based on present evidence, that such practice is detrimental to the best interests of scientific medicine and of the people themselves. When medical service is made impersonal, when the humanities of medicine are removed, when the coldness and automaticity of the machine are substituted for the humane interest inherent in individual service and the professional and scientific independence of the individual physician, the greatest incentive to scientific improvement will be destroyed and the public will be poorly served.

APPEALS PENDING

During the year the Judicial Council has had before it two important appeals in which decisions had not been arrived at when this report was being prepared.

Respectfully submitted,
GEORGE EDWARD FOLLANSBEE, *Chairman;*
J. N. HALL,
DONAL MACRAE, JR.,
F. W. CREGOR,
JAMES B. HERRICK,
OLIN WEST, *Secretary ex officio.*

ECHOES FROM THE CENTENNIAL MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

Complimentary statements of our Centennial meeting continue to come in. It is a pleasure to us to know that our program created such a favorable impression.

We have received several orders for the Centennial Volume containing the papers and addresses delivered before the general session.

We have not received a sufficient number of orders to enable us to get the book out at the price of $3.00 per volume. We do not propose to get it out at a financial loss to the Association.

We believe the entire membership should have the volume—not only for the valuable reading matter it will contain, but as a souvenir of the one hundredth birthday of the Association.

If you are interested write in and request a volume at the price of three dollars.

DEATHS

Dr. W. W. Holland, of Dyersburg, aged 45, died on June 8th after a short illness. Dr. Holland graduated from the University of Nashville Medical School in 1909.

Dr. C. C. Sullivan, 63, died at his home in Nashville on June 29th. He graduated from the Vanderbilt Medical School in 1892.

NEWS NOTES AND COMMENTS

About 300 railroad surgeons of the United States recently held a three-day convention in Chattanooga.

Dr. R. E. L. Smith, of Knoxville, was elected state vice-president of the Exchange Clubs.

The number of people visiting the Tipton County Health Office in Covington broke all records of that office since its organization last fall. During Saturday there were 726 people in the office to receive the various free services given by the department.

Since the first part of April, the visitors in the office on Saturday has ranged from 300 to 500, but last Saturday set a record for the office—*Covington (Tenn.) Leader.*

Dr. F. H. Gault, formerly of Cornersville and Florida, has located in Lewisburg.

Dr. A. E. Ray has severed his connection with the U. S. Hospital at Little Rock and has returned to practice in Tullahoma.

From August 11th to 22nd the Chicago Medical Society will hold summer clinics at the Cook County Hospital. Anyone interested may obtain information by writing the Society at 185 No. Wabash Avenue, Chicago.

Opposition of the American Medical Association has cost Dr. John R. Brinkley, former Memphian, now of Milford, Kan., his license to continue operation of his radio station KFKB.

Dr. Brinkley aroused the ire of the association by his "gland operations" and prescriptions by radio. When his application for renewal of a radio license was sent to Washington, the association opposed it, and Friday the Federal Radio Commission denied application.

At recent hearings, association witnesses condemned Brinkley's practice of prescribing by radio as "dangerous," and testified Brinkley's "goat gland operations" are not borne out by medical experience.

Brinkley in return brought before the commission a number of his "patients" who had undergone the operation and tried his broadcast prescription.

In July, 1927, we began publishing abstracts of current literature. No doubt our constant readers have noticed the regularity with which the abstract on surgery has been appearing. A check-up of our abstractors shows that Dr. John L. Dies, of Memphis, has not missed a single issue during the last three years. We feel sure that every reader of the Journal appreciates not only this regularity, but also the manner in which the surgical abstracts have been written.

After twenty-three meetings this year, Dr. Jesse Hill sent out to the members of the Knox County Society the "attendance score card." Of the 143 members, 18 have been too busy to attend a single meeting. The average member has been present more than eight times and the average meeting has been attended by more than 50 members. Twelve members have attended more than twenty meetings. Forty-six members, 32%, have attended more than half the meetings.

Dr. T. H. Martin has assumed the position of resident surgeon in the Nashville General Hospital.

Drs. Geo. D. Boone and W. Gardner Rhea have leased the Wiggins Clinic in Paris. They are adding some equipment and redecorating the building.

"CAN YOU BEAT IT?"

This is the kind of invitation the Knox County members received one day in June:

"Dear Doctor: Your Medical Society will meet again Tuesday evening, July 1, 1930, about 8 p. m. Remember, your Society always meets whether it is hot, cold, wet or dry weather. We have a nice hall, electric fans, comfortable, good seats, good scientific papers, fine class of doctors to associate with, and no collection. Can you beat it? Come. Very truly yours,

"JESSE C. HILL, M.D.,
"Secretary-Treasurer."

MEDICAL SOCIETIES

Bedford County—Dr. T. J. Coble read an interesting paper on "Fractures Around the Elbow Joint" at the meeting on June 19th. Dr. T. R. Ray opened the discussion.

The attendance was good and all present enjoyed the program.

Carroll, Henry, Weakley, Benton Counties—Sixteen doctors listened to papers by Drs. Bunting and Motley, both of Memphis, at the June meeting. The subjects were "Epidemic Encephalitis" and "Pitfalls in Diagnosis."

Dr. R. Graham Fish, of Paris, presided in the absence of the President.

Coffee County—The June meeting was held in the office of Attorney R. L. Keele. Dr. W. M. Wilson read a paper on "Pellagra" and a general discussion followed.

Dyer, Lake and Crockett Counties—July 2nd: Case Report by Dr. E. S. Hopper, Alamo. Case Report by Dr. J. P. Baird, Dyersburg. "Intravenous Pyelography," by Dr. C. L. Denton, Dyersburg. "Prostatic Obstruction," by Dr. I. G. Duncan, Memphis.

Five-County Medical Society—On May 27th a meeting was held in Waynesboro. Twenty doctors were present. The program was as follows:

Paper by Dr. Risden DeFord, Savannah, Tenn., subject, "Differentiation of Kidney Disease, Commonly Called 'Bright's Disease'," discussed by Drs. J. W. Danley, Watt Yeiser, H. C. Boyd, T. A. McAmis and T. J. Stockard.

Paper by Dr. Paul DeWitt of Nashville, Tenn., subject, "Dressings, Wet and Dry, and Their Uses;" discussion by Drs. George C. Williamson and W. E. Boyce.

Paper by Dr. A. A. Jackson of Florence, Ala., subject, "Diseases of the Cervis Uteri;" discussion by Drs. Watt Yeiser, Paul DeWitt and George C. Williamson.

Gibson County—A meeting was held on June 30th. Dr. J. A. Crisler, of Memphis, read a paper on the "Acute Abdomen Prior to Operation," and Dr. W. C. McRee, of Trenton, discussed "Empyema of the Chest."

The attendance was good and much interest was shown in the program.

Hamilton County—The June-July program of the Chattanooga and Hamilton County Medical Society was as follows:

June 19th: "Interstitial Cystitis," Dr. J. B. Killebrew. "Tuberculosis of the Kidney," Dr. Earl R. Campbell. Discussion opened by Drs. S. H. Barrett and G. M. Roberts.

June 26th: "Fundamental Principles in Infant Feeding," Dr. J. B. Phillips. "The Mal-nourished Child," Dr. W. E. Van Order. Discussion opened by Dr. Wm. D. Anderson.

July 3rd: "Intestinal Obstructions," Dr. A. M. Patterson. "Further Studies in Blood Transfusion," Dr. Wm. J. Sheridan. Discussion opened by Dr. J. H. Revington.

July 10th: "Colles' Fracture," Dr. J. J. Armstrong. "The Principles of First Aid," Dr. W. J. Hillas. Discussion opened by Dr. R. C. Robertson.

Knox County—June 10th: Mr. Henry McMillan, an authority on life insurance, addressed the Medical Society on "Life Insurance."

June 17th: Dr. H. K. Cunningham gave a paper with lantern slides on "Acute Mastoiditis, Some of Its Complications and Report of Cases."

June 24th: Dr. R. B. Wood spoke on "Lesions of the Motor System." Dr. H. C. Long opened the discussion.

A Petrolagar movie was also given.

July 1st: Dr. Jas. T. Campbell read a paper on "Drainage of Wounds."

Monroe County—On June 10th, Dr. H. Casparis, of Nashville, spoke on "Childhood Tuberculosis," and demonstrated the Tuberculin Test.

Dr. W. J. Cameron, of Sweetwater, talked on "The Diagnosis of Tuberculosis."

Roane County—The regular monthly meeting of the Roane County Medical Society was held on June 17th. Those present were Drs. P. Zirkle and John Roberts, Kingston; J. J. Waller, Oliver Springs; T. L. Bowman and W. W. Hill, Harriman.

Dr. Roberts read an interesting paper on "Bright's Disease," which brought out an interesting discussion by those present.

Robertson County—The regular monthly meeting of the Robertson County Medical Society was held at Watauga Sanitarium at Ridgetop, June 17th, with Dr. W. S. Rude acting as host. A delicious luncheon was served at noon and in the afternoon papers were read by Drs. John M. Lee and J. Owsley Manier, of Nashville. The title of Dr. Lee's paper was "The Treatment of Infectious Diarrhea," while "Hyperthyroidism" was the subject of Dr. Manier's paper.

Members of the local society present were Drs. Thomas, Garner, Freeman, Bradley, Fentress, Rude and Fyke.

Rutherford County—The Stone's River Academy of Medicine met June 11th at the Hospital. Dr. Henry Douglas, of Nashville, read a paper on "Renal Tuberculosis."

Tipton County—Good attendance and interesting case reports characterized the meeting held at Covington June 12th. The July meeting was held at Tabernacle with Dr. A. J. Roby. Much interest is being shown in the Tipton County meetings.

OTHER MEDICAL SOCIETIES

Dr. E. Dunbar Newell, of Chattanooga, was recently elected President of the Association of Surgeons of the Southern Railway System. Next year the meeting will be held in Washington.

Upper Cumberland

The thirty-sixth annual session of the Upper Cumberland Medical Society was held at Red Boiling Springs June 10th and 11th. The program was good, probably better than usual. The attendance was large and all enjoyed the sessions.

Officers for next year are Dr. R. C. Gaw, Gainesboro, President; Dr. Z. L. Shipley, Cookeville, Secretary.

BOOK REVIEWS

INFANT NUTRITION. By Williams McKim Marriott, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine, Physician in Chief, St. Louis Children's Hospital, St. Louis. Cloth, pp. 375. St. Louis: The C. V. Mosby Company, 1930. Price $5.50.

This textbook of infant feeding for students and practitioners of medicine will receive a warm welcome from those of the profession who are interested in the problem of infant nutrition. This work is a compilation of the teachings of Dr. Marriott on this phase of pediatrics, and though one may not accept all that the author may advance, his splendid contribution to scientific medicine compels respect and admiration. The aim of this work is to contribute to the simplification of the feeding of infants and it goes without saying that the author has succeeded in a large measure in the solution of this complex problem.

The first seven chapters are devoted to a consideration of growth and development of the normal infant, energy metabolism, and the metabolism of the various food elements including the vitamins. The digestion in infancy and the stools in infancy are each given a chapter and from the latter one gets the impression that the character of the stools is of less importance than was formerly thought.

One may be surprised at the brevity of the discussion of lactic acid milk per se, but that is mentioned so frequently throughout the text that the subject is really not neglected. Contrary to other texts, the author states, "The ready cooked package cereals such as corn flakes, shredded wheat, and puffed grain are as readily digestible as the cooked cereals and lend variety to the diet."

In the chapter on diarrhea emphasis is placed on the bacteriology of the intestinal tract and its contribution to this symptom, even in those diarrheas that are not due to the dysentery bacillus. Again, diarrhea in the breast fed infant, especially in the winter months, should prompt one to search for the parenteral infection which is the most frequent cause. The author thinks well of a buffered lactic acid solution devised by Hartmann in the treatment of diarrhea.

The chapter on common infections which are associated with nutritional disturbances is a departure from the usual text of this kind, though the subject is of such importance to justify this separate consideration. The chapter devoted to nutrition and development of the teeth is well worth while, though it emphasizes the great lack of information available on that particular subject.

Anhydremia, acidosis, and alkalosis are ably discussed at length, the most recent developments in these conditions being given. A chapter on miscellaneous technic has much of practical value.

The text is enhanced by numerous original illustrations and charts, and barring a few typographical errors, is a well written book that will be enjoyed by all who are interested in pediatrics.

—J. M. L.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Avertin Anesthesia. Charles Stanley White, M.D., F.A.C.S., Washington, D. C. Southern Medicine and Surgery, May 1930.

Tribromethyl alcohol, also known as Avertin, is a white crystalline powder 3½% soluble in water at 40 degrees centigrade. Its molecule at a temperature above 45 degrees centigrade is broken into bromic acid and dibromacetaldehyde. In a 3½% solution Avertin is readily absorbed by the bowel.

Placed in the rectum it produces sleep in from three to ten minutes continuing for two hours or more. Before using it is tested by an aqueous solution of Congo red. No color reaction is noted if the Avertin is stable.

Narcosis is attended with no excitement or muscular spasm. Respirations are increased in frequency. The pulse and blood pressure are not notably altered. Muscular relaxation is striking and the jaw must be kept elevated to insure an open airway.

The maximum dose is 100 mg. for each kilogram of body weight—80 to 90 mg. is the author's average dose. The relaxation under Avertin alone is generally sufficient for minor operations, but for abdominal operations we prefer the addition of ethylene; nitrous oxide or local. No pneumonia, collapse of lung or nephritis has occurred in the author's series and nausea and vomiting occurred in about 25% of cases.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Observation on Bacteriophage in Infections of Urinary Tract. Jour. Urology, April 1930; A. P. Krueger, H. K. Fober and E. W. Schultz.

The authors made repeated examinations of specimens of urine from eight cases of acute urinary infection in patients treated with oral administration of alkalis, and think that alkalinization, when effective, may act in part by facilitating enhancement of the virulence of bacteriophages naturally occurring in the urine, probably by providing the optimal reaction for bacteriophagy. Of twelve patients treated with acute urinary infection, only one harbored a strain of B. Coli that was resistant to the bacteriophages in their possession, and in 77 patients suffering from chronic infections of the urinary tract, 42 were infected with bacteriophage resistant organisms. In 35 chronic cases bacteria capable of being completely lysis by one or more races of bacteriophage were found. Sixteen of these cases were treated with pooled bacteriophage suspensions, while nineteen received matched individual races of bacteriophage. In both of these groups the bacteriophage suspensions employed were found by preliminary tests to be fully active on the casusal organism and were administered by subcutaneous injections and by instillations into the bladder and kidney pelvis. In only three of the patients of the sixteen receiving pooled suspensions was a prompt recovery noted; two patients failed to respond at all to the treatment, and eleven gradually recovered. Among the nineteen patients to whom matched individual races of bacteriophage were administered there occurred only one prompt recovery, four total failure, and fourteen gradual recoveries. There were 25 patients out of 35 treated in whom recovery was gradual and not clearly attributable to the bacteriophage itself; four cases of immediate and striking response, and six complete failures.

Laboratory Diagnosis of Undulant Fever. Jour. of Lab. & Clin. Med., Feb. 1930; C. M. Carpenter and R. A. Dook.

These authors find that the agglutination test is the simplest and most satisfactory method of ascertaining whether or not a patient has undulant fever. However, it must be remembered that frequently no agglutinins are present in the serum of patients suffering from the disease. Six per cent of the cases they have studied have fallen in this group. The complement fixation test has no distinct advantage over the agglutination test. When the serum from a patient agglutinates both Brucella abortus and melitensis, it is necessary to employ the agglutinin absorption test to determine which organism is responsible for the infection. The blood count is of great assistance in establishing a diagnosis of undulant fever. In mild cases the blood picture is not changed, but if the symptoms of the disease persist for several weeks marked changes are observed which cannot be considered specific for undulant fever, but furnish corroborative information that aids in making a diagnosis. An extensive series of blood counts on twenty patients with undulant fever showed a secondary anemia and a leukopenia, with a relative and absolute lymphocytosis as constant changes.

DERMATOLOGY

By E. E. Brown, M.D.

Doctors Building, Nashville

A New Treatment for Erythematous Lupus.

Bordier, in The American Journal of Physical Therapy for February, 1930, describes what he calls medicated d'Arsonvalization. This consists of the use of an electrode activated by the Oudin pole of a high frequency machine. Between the electrode and the skin, however, a cotton swab is placed, saturated with some medicament. Bordier uses the tarto-bismuthate of sodium. He says that the absorption of the medicine is mechanical, it being driven into the tissue by the high frequency current, but without ionization. No electrolytic action, of course, is possible with these alternating currents. The author states that the results attained are really remarkable, the lesions in every case having disappeared.

Use of Bacteriophage Filtrates in Treatment of Suppurative Conditions, by T. B. Rice, March, 1930, in The Journal of the American Medical Association.

Rice reports the results of his experience involving approximately 300 cases treated by the local application of bacteriophage filtrates to a wide variety of suppurative lesions, such as boils and carbuncles, abscesses, staphylococcus cellulitis, staphylococcus purulent arthritis, appendiceal abscess, peritonitis, puerperal sepsis, fecal and urinary fistulas, cystitis, infected wounds, bed sores, leg ulcers, perineal lacerations, osteomyelitis, infected tuberculous lesions of bone, mastoidectomy wounds and running ears, sinusitis, staphylococcus septicemia, impetigo, acne and streptococcus infections. In about 90 per cent of the cases excellent results have been obtained. Stock preparations are apparently as good as those specially prepared, except in a few cases. Stock preparations have the great advantage that they are readily available at the time needed, and can be used at a distance from a bacteriophage laboratory. Dosage does not seem to be important, provided the filtrate is used in sufficient amount to give good contact as a wet dressing. No bad results of importance have been observed. Strong antiseptics have seemed to be contraindicated while phage was being used.

INTERNAL MEDICINE

By R. B. Wood, M.D.

Medical Building, Knoxville

Myxedema During the Administration of Iodin in Exophthalmic Goiter, by Thompson, Thompson, Brailey and Cohen.

Giving iodin to patients who had previously undergone sub-total thyroidectomies, the authors conclude that one may expect first no response in the majority of cases; second a depression of the basal metabolic rate to a subnormal level but no clinical symptoms, or clinical evidence of hypothyroidism varying from mild symptoms to marked signs of myxedema.

It was noted in those with myxedema that thyroid extract given at the same time as the iodin would cause the symptoms to disappear, and omitting both medications the same result would follow.

The authors conclude that iodin may reduce the high metabolic rate of exophthalmic goiter before operation.

Essential Hypertension, by Edw. J. Stieglitz, M.D., in Am. Jr. of the Med. Sc., June 1930.

The author in a discussion of hypertension produced because of emotional Vaso-motor instability either of the conscious or subconscious routes, states his belief in a hypertension from an "irritable Vaso-motor condition." An extreme lability of the Vaso-motor apparatus is observed in some people, who from emotional disturbances, may have hypertension for varying periods of time and on adjusting themselves or after the physic stimulus is removed, return to a normal level.

Many symptoms are like those of the climaterium in the female, but there are no physical characteristics which are not noteworthy. He does not believe the thyroid is responsible as the metabolic rate on his reported case was normal. "Endocrinologic faults of hereditary origin are not unlikely etiologic factors," he states, but no clinical evidence of adrenalin involvement or of other glandular involvement was cited except sexual disturbances were frequent and notable.

The author further states the possibility of such emotional hypertension forming the basis of later permanent hypertonia.

As a therapeutic agent the author advises the administration of 10 gr. Bismuth Subnitrate, thrice daily. However. Bromides or other emotional sedatives may be used to advantage.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

Rupture of the Uterus With Report of Seventeen Cases, by Irving W. Potter, Amer. Jour. Obs. & Gyn., Feb. 1930.

Owing to the many operations upon the uterus, plus the pathology of the uterus that is many times found, accounts for the often ruptured uteri reported from time to time, says the author. He stresses the fact that this partially damaged uterus cannot always stand the strain of normal pregnancy and labor, to say nothing about the injudicious use of pituitrin, which is so prevalent throughout the country, and likewise the many inappropriate obstetrical operations.

The symptomatology may vary according to whether the rupture is complete or incomplete, whether at an old Caesarian scar, or in the tissue adjoining the scar, and also as to where the placenta is located—incomplete or partial rupture is accompanied by steady and persistent pain in the abdomen, increased and boardlike rigidity, but when there is a sudden cessation of pain, complete rupture is more than likely. Rupture at term occurring at the site of an old Caesarian scar may cause no symptoms. The scar simply opens, and if the placenta is on the posterior wall. the membranes protrude and a mass is felt under the skin of the abdomen. Potter stresses the sharp, well-defined edges of the uterine scar. If the rupture has taken place through the placenta site, there is usually pain until complete rupture occurs, when the pain ceases and symptoms of shock appear, due to hemorrhage. Then again the fetus may be pushed through the uterine wall, the placenta remaining intact, with no hemorrhage. Lastly, the most dangerous type is where the uterine wall is very thin and torn in different directions, followed by massive hemorrhage and shock.

Where the placenta is retained, and the child is free in the abdominal cavity, the tear is repaired. Where extensive rupture has taken place the uterus should be removed. And in all cases where the uterus is left in, tubal sterilization should be done. He states, that the highest mortality occurs in those cases where hysterectomy is necessary.

He reports 1,750 personal abdominal and vaginal Caesarian sections. No rupture occurred in 43 vaginal Caesarian sections, but there were 17 ruptures in the abdominal Caesarian sections, including all types with only three maternal and nine fetal deaths. In eight cases, both mother and child were spared.

This paper certainly stresses the unusual diagnostic acumen and courageous operative dexterity which Dr. Potter possesses in dealing with uterine ruptures, thereby accounting for his apparently low mortality, if it can be such, and likewise shows his frankness in reporting the frequency, following his Caesarian sections, with no apology. I do not suppose there is another physician who has ever had such a tremendous experience in dealing with ruptured uteri, in his own clinical cases, as has Dr. Potter.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Diagnosis of Acute Iritis. Edward Jackson, M.D., American Journal of Ophthalmology, June 1930.

With a history of exposure to cold, a patient may come with lacrimation, photophobia, the eyeball reddened by conjunctival congestion, and the belief that he has "caught cold in the eye." There may be no pericorneal zone of deep redness, the pupil may be active and the iris of good color. Often in such an eye the disturbance is confined to the conjunctiva and the surface of the cornea. But the physician should not, even in his own mind, commit himself entirely to the diagnosis of conjunctivitis. In most cases it is only conjunctivitis, but in a few there is also a deeper inflammation. Next day there may be a pericorneal zone of redness, a discolored iris, and a sluggish pupil, although pupillary adhesions and severe pain may only come later. The diagnosis between acute conjunctivitis and iritis cannot always be made at first glance. In either condition a mild purgative, rest, and light diet will be helpful; and inspection of the eye next day will give a better basis for the diagnosis and treatment.

Keratitis may give a pericorneal zone of redness, as distinct as that of iritis. It should be thought of, and corneal opacities and irregularities of surface carefully looked for. Even when the cornea looks clear and smooth, it may not be normal, but may have started to become "inflamed." Mild cases of snow blindness, or sunburn in the early spring, may show a cornea normal in appearance. On the other hand, irritation in an eye with old corneal scars and irregularities is easily ascribed to keratitis, when the condition is really one of acute iritis. Even the recent haze of cornea and aqueous or the deposits on the posterior surface of the cornea that have come with iritis may mask the changes in the iris, or may be misinterpreted as signs of keratitis. The pericorneal zone holds the nutritive supply of both cornea and iris, and the close relation between the structures must not be forgotten.

Cases of glaucoma mistaken for iritis and treated with atropin occur, and sometimes go on to blindness. The possibility of glaucoma should be considered before putting atropin in any inflamed eye. But the opposite mistake is possible. In iritis the first evidence of congestion of the iris may be a sluggish contraction of the pupil, that causes it to appear dilated and suggests glaucoma. In a few cases the instillation of eserin such an eye has caused very severe pain, and has increased the severity of the inflammation. Danger of this is not eliminated by the use of the tenometer. The tenometer verifies any increase of tension, and may lead to the use of a miotic when a mydriatic is needed. In a woman of 70 years, the tension of the eye was 52 mm. of mercury. Under atropin the tension came down to 24 mm., and the patient lived to be 77 years old without any other symptom of glaucoma. A younger woman had intraocular tension of 60 mm., but showed uveitis. She was treated with mydriatics, and has since lived fifteen years without symptoms of increased tension.

When the presence of iritis has been established, the diagnosis is only well begun. The attack may be caused by one or more of several extraocular conditions; and the discovery and treatment of the cause is often the most important service that can be rendered to the patient. Iritis may come by extension of inflammation from neighboring parts, or by trauma to the eye, as contusion without any visible external injury. But more frequently it is due to some general disease or affection of a distant organ. Failure to search out and remedy the distant cause may nullify all local treatment, and may allow an acute iritis to become chronic or recurrent, wi the dangers to the eye that such inflammations entail, including closure of the pupil, or glaucoma.

The long known causes of chronic iritis, syphilis, rheumatism, gout, and tuberculosis, generally begin with an acute attack. The same is true of the focal infections, now recognized as causes of many disturbances formerly classed as "rheumatic." These must not be ignored in connection with any acute attack, and there are other causes that are less common, but just as important to remember. An iritis which is at first acute may be brought on by chronic constipation with absorption of intestinal toxins, by diabetes, or by arthritis deformans. Infective jaundice due to a spirochete is often marked by uveitis. Opthalmic herpes zoster may cause it. The acute contagious fevers may be followed by it. The search for the real cause of an acute iritis often needs to be long and difficult. But it is worth making, both to cure the attack and prevent its sequels and recurrence. The first scientific meeting of the Association for Research in Ophthalmology, to be held at Detroit, June 24th, is to be devoted to the etiology of acute iritis. The more we learn of the etiology the more thorough can be our search for the diagnosis of iritis.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Acuff Building, Knoxville

Fracture Dislocation of the Fourth Lumbar Vertebrae with Paralysis, by S. S. Hergikoff. Journal Bones and Joint Surgery, April 1930.

Dislocation of the lumbar vertebrae, whether or not complicated by fracture, are of extreme rarity. Cotton questions their existence. The case here reported is interesting and instructive.

A summary of the literature discloses that:

(1) "Very little reference is made to lumbar luxation above the lumbo sacral joint.

(2) "The consensus of opinion is that dislocation of the lumbar vertebrae cannot exist uncomplicated by fractures.

(3) "Attempts at reduction are rare and are only briefly referred to.

(4) "Fusion operation has been generally recommended.

(5) "The cases in which there was primarily a paralysis usually terminate with a residual paralysis.

(6) "Lateral and steroscopic anteroposterior x-rays are necessary for a thorough diagnosis."

The case reported is one of a laborer, 29, who was struck by a crane, pinning him between the skip and the tower. This produced an anterior dislocation of the fourth lumbar vertebrae on the fifth. It was also displaced laterally to the left for about one-fifth of this diameter of the body of the bone. The superior articular processes of the fifth lumbar vertebrae were fractured.

Method of reduction used:

Patient was anesthetized and placed on the floor on the stretcher. A folded sheet was slung under the arms. An assistant took hold of each end of the sheet for counter extension. Each leg was grasped by an assistant. "The operator knelt down beside the patient with one arm under the back just below the level of the luxation and the other across the patient's lower chest above the site of the lesion. The assistants then simultaneously applied steady by very strong traction so as to stretch the spinal column. At a signal they arose and approached each other slightly in such a manner as to partially flex the spinal column and at the same time to flex the thighs to an angle of ninety degrees. At the time of the second part of the maneuver the operator leaned his entire weight on his right arm and across the patient's chest and at the same time assisted in raising the patient's pelvis with his arm."

By above maneuvers it was completely reduced —a double spika cast was applied on a Hawley table, flexion of the thighs and spine being thereby maintained.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon, M.D.
Doctors' Building, Nashville

The Non-Surgical Dry Treatment of Chronic Suppurative Otitis with Iodin Powder (Sulzberger). Dr. M. D. Lederman, New York City, The Laryngoscope, June 1930.

The author relates his experience and details his technique in the treatment of chronic suppurative otitis media during the past fourteen years.

Radical surgery has its place in distinct phases of this disease. Deliberate and conscientious consideration must be given to the importance of the economic question for those suffering with this disease, and the attempt made to conserve, as far as possible, the auditory function.

No attempt has been made to study the cases reported from the standpoint of bacteriology for the majority of these patients had suffered for many years with discharging ears without fulminating symptoms. Frequently individuals who come for an opinion as to the necessity for radical surgery have been cured by this simple treatment. Similar results have been obtained by others, who have carried out the technique described. Since employing this preparation, surgery has not been resorted to in any case lacking active indicative symptoms, no matter how chronic the cases may have been.

The experience with the iodin powder convinces me that the indications for operative intervention must be distinct and urgent before resorting to such a drastic measure with its attendant possibility of great loss in the auditory function.

The following suggestions and technique are offered:

First: Irrigations to cleanse the ear are forbidden. The canal and middle ear cavity must be cleansed as thoroughly as possible. This is best accomplished by repeatedly using small applicators armed with cotton, not simply removing the secretions in the canal or at the perforation. It means the use of curved applicators to enter the perforation and the attempt to reach the attic, hypotympanic space and orifice of the eustachion tube in the tympanum. Any pathological tissue must be eliminated, granulations of sufficient size and diseased ossicles, if visibly involved. The larger the perforation of the drum the more the action of the powder, since a greater quantity can be introduced into the middle ear. When the perforation is small it should be enlarged so that the remedy can reach the diseased area. The final procedure is to insufflate the iodin powder into the middle ear through the perforation in the drum. This is best accomplished by using a Davidson hard rubber insufflator with a shovel arrangement on the distal section. The ordinary insufflators have a curved extremity; this curved portion should be cut off and the end smoothed by sand papering. The straight end should not be over three inches long as this gives complete control when pressing on the rubber bulb. The colored DeVilbiss powder blower may be used, but too much air pressure will force the powder out of the middle ear and canal. For initial treatments 0.75% iodin powder (Sulzberger) is used. The frequency of applications depends upon the quantity of secretion present. At times daily treatments are necessary, when the secretion is profuse. The majority of patients are treated twice weekly. No home treatment is allowed except when patients live out of town, or cannot appear regularly. Then a teaspoonful of powder to one ounce of alcohol is prescribed. The patient is instructed to remove as much of the secretion as possible with cotton tipped toothpicks and then instill 10 drops of this solution into the canal, with the diseased ear uppermost. This position should be maintained for fifteen minutes.

Papillary hypertrophy of the mucous membrane of the middle ear has been observed to subside under treatment with the iodin powder. At times gentle suction is employed to remove secretion from the middle ear by means of a small glass or metal canula. Care must be used in doing this as some patients readily show vestibular disturbances if the suction is too strong.

Suction with an instrument which entirely closes the external auditory canal should never be employed as such a procedure may cause very annoying symptoms or even hemorrhage in the labyrinth and middle ear. After all secretion has been removed the canal and middle ear are cleansed with 95% alcohol and then dried. The thorough cleansing of the canal and middle ear is a very important factor in the ultimate success of the treatment.

Many cases require much time and patience before the middle ear is in proper condition to receive the application of the iodin powder, but the ultimate results reward the faithful attention to this necessary detail. Of course, the diseased areas are not properly cleansed by this method, but some of the remedy reaches the diseased parts and it prevents the patient from using irrigations. When the secretion remains at about the same quantity after several treatments have been given a stronger 2% powder is employed. It is frequently necessary to use a weak cocain solution as sensitive patients complain of a burning sensation. In some very stubborn cases as high as 5% or 10% iodin powder has been used without unpleasant reaction. Some skins are very sensitive and a local dermatitis may result from frequent applications of powder. Any bland ointment painted on the floor of the canal before introduction of the powder will obviate this trouble.

The question of how this powder secures good results in such chronic cases naturally arises. I is an intimate association of iodin with boric acid. The action of the powder is due to the iodin, which as the boric acid dissolves in the secretions is liberated in minute divisions and then penetrates deeply into the tissues. We, therefore, have an active germicide which exerts its power as long as any powder remains in the diseased cavity.

Dr. Lederman quotes the opinion of several men who have employed the treatment with encouraging results. He also appends detailed reports of twenty-two cases in which his results have been remarkable. Any procedure by which we are enabled to cure, even a small percentage of these cases deserve a faithful, painstaking and impartial trial, for certainly operation according to the present technique, as practiced by the majority of otologists, leaves much to be desired in the results obtained, as to the complete stoppage of the discharge and the results on the auditory function.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Newer Aspects of the Therapeutics of Viosterol (Irradiated Ergosterol). A. F. Hess, M.D., J. M. Lewis, M.D., and Helen Rivkin, M.A. Jour. A. M. A., June 14, 1930.

Sixty infants 4 to 12 months of age were given 10 to 20 drops daily of viosterol from autumn to March in an attempt at absolute prevention of rickets. They were given adequate and appropriate food to correspond to the requirements for the age, plenty of fresh air, and were outdoors almost daily. Progress was followed by clinical examinations, analysis of blood for calcium and phosphorus, and by roentgenograms. The results of this study are given in the following summary by the authors:

"In the course of a test of a large number of infants it was found that although viosterol, in its present dosage, conferred protection against rickets, some evidences of this disorder were apparent in a small number of cases. No hypercalcemia or other untoward symptoms developed.

"The cases that showed signs of mild rickets were remarkable for the fact that the inorganic phosphorus of the blood was maintained at its normal concentration; in no instance did the phosphorus fall below the normal level. This peculiar manifestation—rickets associated with undiminished inorganic phosphorus—was noted last year when irradiated milk was given. It was brought about also in animals by feeding inadequate amounts of viosterol.

"A clinical experience of this kind indicates that an analysis of the blood for inorganic phosphorus may be misleading and that, when viosterol is being given, the presence of rickets will have to be determined by clinical signs and roentgenograms. It shows also not merely that rickets is a systematic disease, but that local factors may play a determining role in calcification at the epiphyses. Furthermore, it emphasizes the fact that the product of the calcium times the phosphorus concentration in the blood is not a reliable indicator as to whether or not active rickets is present.

"The present method of irradiation of ergosterol possibly elaborates a factor which increases the inorganic phosphorus in the blood, quite apart from any antirachitic action.

"Viosterol is a remarkable curative agent for rickets. It is absolutely reliable, very rapid in its action, and never associated with the development of hypercalcemia.

"The present method of standardizing viosterol on the basis of "cod liver oil units" is founded on the false premise that the action of cod liver oil and of viosterol is the same in infants as in rats. A better method would be to compute the potency directly either as protective or as curative 'rat units.'

"The dosage of viosterol should be increased from two and a half to three times. This can best be accomplished by increasing the strength of the solution."

ROENTGENOLOGY

By C. M Hamilton, M D., and H. M. King, M.D.
Doctors Building, Nashville

A Review of the Treatment of Uterine Fibroids, with Special Reference to the Use of Radium, by William Neill, Jr., M.D., Baltimore, Md., in The American Journal of Roentgenology and Radium Therapy, April 1929.

Most fibroids are benign, but they may cause many complaints. Malignancy can be excluded by careful examination. They are more common after the age of 40. It tends to produce sterility. Fibroids exaggerate menstruation and usually cease to grow with menopause. Sarcomatous degeneration is rare and incurable. Carcinoma does not occur more often than in the normal uteri. Parametral inflammatory changes are common.

A brief resume of the early history of hysterectomy is given. In the beginning most of the cases were diagnosed as ovarian tumors. The mortality was extremely high. Through two generations from the days of Burnham, Atlee, Kimball, Stimson, Bear, Keith, Kelly and Price, to the present, hysterectomy has become a fairly safe procedure. However, radiation is safer and a long hospital experience and a stormy convalescence can be obviated by its use.

There are three methods of choice: (1) "let alone and observe," (2) removal, (3) irradiation. The first plan should be advocated in symptomless cases. Removal is indicated in the following types: (1) large tumors extending above umbilicus; (2) painful tumors; (3) tumors associated with inflammatory diseases; (4) tumors accompanied with fundal malignancy; (5) tumors obstructing urinary passage; (6) calcified tumors; (7) questionable cases; (8) neurasthenics. Myomectomy should be limited to small isolated growths.

Irradiation is indicated in the following: (1) small movable tumors below umbilical level; (2) selected large tumors; (3) all cases that are not physically suitable for surgery. Irradiation will accomplish: (a) check menstruation, (b) reduction of tumor, (c) complete disappearance in majority of instances, (d) permit return of menses in young individuals. The application is a safe measure. The results are obtained by its action on both tumor and ovaries. Production of menopause is essential for best results. An accurate diagnosis is more important than in operative procedure. Diagnostic curettage and palpation should be done under anesthetic. Submucous, subserous and interstitial tumors respond to radiation; 75% of all types are amenable.

The response is variable. Some begin to subside before amenorrhea. Others continue to reduce for years; 80% of small tumors and 50% of large ones completely disappear.

Technique: After curettage a radium sound is placed in the uterine cavity. It is filtered by 1 mm. of brass. Three capsules in tandem are usually employed. 1500 mc. hrs. is an average dose. In exceptional cases, external radiation is used. Nausea and uterine cramp may occur in the first 24 hours. Seven days rest in bed is usually sufficient.

Summary:

Seven hundred forty-one cases were treated in Howard A. Kelly Hospital from April, 1915, to December, 1925. This report is based on 650 cases. Four hundred eighty-eight were married and 162 were single. The average age was 43. Intrauterine radiation was used in 493 instances and external radiation in 157.

Immediate cessation of menses occurred in 350 cases. Others menstruated from one to four times. In 16, menstruation returned without regrowth of tumor, after 2 to 5 years. Two cases have given birth to healthy children. One still birth occurred at full term.

Hot flushes occurred for six months to three years in most cases. It is less noticeable than in normal menopause. A few complained of rheumatic pains. No changes in blood pressure was noted. A tendency to gain weight can be controlled by diet. A vaginal discharge may last a year. There were no deaths.

A second treatment was necessary in 43 cases. The tumor may disappear within 6 weeks to 10 years.

Fifty-four hysterectomies were done from six months to several years afterwards. Operation was not made any more difficult. Five cases died from operations. Two cases developed carcinoma. One after five years and another after eleven years after irradiation. It is thought that radiation had no causal relation. Intrauterine infection took place in 12 cases.

Conclusion:

Radium therapy has been effective in the majority of cases. Should the end result prove unsatisfactory, operation can be done at a later date. There is usually improvement in physical condition.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Caecum Mobile. Crotti, A. American Journal of Obstetrics and Gynecology, 19, 356-366. March 1930.

Mechanical interference of the colon may occur at four points, namely, in the right iliac fossa, at the hepatic flexure, at the splenic flexure and in the left iliac fossa. Ptosis of an organ does not cause many symptoms, complaint begins only when there is mechanical interference with the organ. The mechanism of production of mechanical lesions is better understood when the embryologic development of the intestine is considered. A diverticulum appears at the lower end of the intestinal tube about the end of the first month, which develops into the caecum. The caecum grows rapidly during the first few months, except the tip end which forms the appendix. The caecum, at first on the left side, migrates upward and then to the right side where it finally comes to rest, below the liver, near the gall bladder and kidneys. Later, the caecum descends, with the colon and appendix, and finally comes to occupy its permanent position in the iliac fossa. If everything goes well the primitive mesocolon will become firmly attached to the parietal peritoneum covering the lumbar and ileo-psoas muscles, thus anchoring the caecum and colon.

Interference with the normal developmental process may result in all sorts of malpositions. The caecum may be held up below the liver a portion of the ileum may become adherent in the iliac fossa and prevent the mescolon from fusing with the parietal peritoneum in this place. In consequence, the caecum and ascending colon fail in contracting their natural adhesions, a more or less long mescolon remains persistent and the colon and caecum mobile result.

Bands that may interfere with the function of the colon, strong or thin Jackson's and Lane's Membrane, incomplete rotation of colon, retrocaecal appendix, hyperdescent of the caecum into the pelvis, congenital, and very pronounced degrees of malposition of the caecum and colon, with even a left-sided appendix may take place.

Unless these developmental anomalies are surgically dealt with permanent relief cannot be expected. Medical treatment is only palliative. They produce colonic stasis, and interference with normal motility leads to abnormal secretion and absorption. There is intestinal toxemia and pain. The colon mobile alone would cause little or no symptoms were it not accompanied by a caecum mobile. The colon, attached or unattached, will function more or less normally, but the loss of attachment leads to mechanical troubles. The caecum mobile is most frequently the primary cause of the trouble. The weight of its contents pulls it down over the brim of the pelvis and produces a constriction of the colon at the brim of the pelvis. Congestion, colitis, stasis with putrefaction and pain result. Because of its location, a diagnosis of acute appendicitis is made and appendectomy erroneously performed.

The colon and caecum mobile may simulate a gastric or duodenal ulcer to perfection. Systemic disturbances, with a variety of symptoms, may occur and are quite common.

Diagnosis is made on the history, the physical examination and the x-ray findings. Palpation especially gives valuable information. Attacks may simulate gall-stone colic, right-sided oophorosalpingitis and tender movable kidney.

The technique of operation is simple. There have been no fatalities and no complications. A ptosed and freely movable right kidney should be anchored. Chronic invalidism and unbalanced nervous system that can be laid at the door of the developmental anomalies mentioned warrant undertaking correction measures, especially in young individuals. Furthermore, when the abdomen is opened for some other purpose, colopexy and caecopexy ought to be performed as routinely, when indicated, as the appendix is routinely removed.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Tuberculosis of the Kidney. Braasch, W. F., M.D., (J. Urol., vol. xxiii, No. 6).

In this very practical article, only the atypical or obscure types are considered.

The common sources of error in making a diagnosis of renal tuberculosis are: First, confusion of roentgenographic shadows caused by lithiasis with calcified processes of renal tuberculosis. Second, failure of clinical differentiation of pyelonephritis and tuberculosis. Third, overlooking tuberculosis as the primary cause of hydronephrosis. Fourth, confusion of granuloma in the bladder with malignancy. Fifth, failure to recognize that renal tuberculosis may be present without evidence other than a slight pyuria. Sixth, incorrect interpretation of guinea pig inoculation.

He states that the guinea pig is the most refined of all diagnostic procedures and adds that often it is too refined, i.e., that the guinea pig test may be positive when all other clinical signs and history are negative. He emphasizes that at least two pigs should be inoculated with the urines from each kidney. Occasionally if only one is used the test may be negative even in the presence of tuberculosis. On the other hand a positive test may be found in a perfectly normal kidney due to regurgation of urine alongside the catheter from the diseased kidney or from a genital focus. He repeats that one should never rely on the guinea pig test solely. He states that finding tubercle bacilli and pus on direct smear from the kidney is much more reliable. He has seen tubercle bacilli remain in the bladder urine for five years after the diseased kidney was removed and the remaining kidney entirely normal.

Braasch states that the functional test is sometimes misleading in that a reduced function is often found in a perfectly normal kidney and an almost normal function is occasionally found in a diseased kidney. The functional test is valuable, but is not a true index of the amount of destruction present.

He believes that pyelography in renal tuberculosis is safe and states that he has seen it do no serious harm.

He states that it is the only means of diagnosis in the following conditions:

1st. Early lesions and small circumscribed areas. 2nd. Tuberculosis confined to one kidney and urine from the other positive to guinea pig. 3rd. Differentiation of ureterectasis secondary to ascending ureteritis and that occurring in pyelonephritis. 4th. Identification of doubtful ureteral shadows.

He claims that a negative pyelogram will exclude tuberculosis in 90% of cases. He discusses the latent type of renal tuberculosis and calls attention to the difficulty of diagnosis if examined during the latency. He believes that minute acute lesions sometimes completely heal.

In bilateral renal tuberculosis, if the symptoms on one side are extreme he believes nephrectomy is occasionally justifiable. He cites two deaths following nephrectomy due either to accidental removal or injury to suprarenal. These cases showed sudden drop in blood pressure, extreme prostration, followed by death in exactly 36 hours.

This paper was discussed by Kretschmer, Hamer, Eisendrath, McKenna and others.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII AUGUST, 1930 No. 8

THE ECONOMIC STATUS OF MEDICINE TODAY*

M. L. HARRIS, M.D., President American Medical Association, Chicago, Ill.

IT IS fortunate indeed that English is a living, growing language capable of unlimited development. It is composed not only of words borrowed from many other languages which greatly broadens its scope, but it has great flexibility of expression as shown by the modifications and ideas and thoughts that spoken or written words may bring to mind. This is eminently a prerequisite of any language if it hopes to keep pace with the rapid development of human thought and activity. While it is self-evident that some words must have a definite and permanent significance in order that thoughts may be intelligently conveyed from one person to another there are others dealing with more complex ideas whose meaning can be modified or extended to become more inclusive and thus convey shades of meaning that are found to be of advantage in discourse. Such a word is "economics," a word whose meaning originally related simply to domestic household affairs, but which in the course of time became broadened and extended to mean "the science that treats of the conditions and laws affecting the production, distribution and consumption of wealth or the material means of satisfying human desires." In this sense it relates largely to affairs of the business and industrial world or to the affairs of State as expressed by the term "Political Economy," and more recently we find it used in such expressions as "Economic Entomology," "Economic Geology," "Economic Zoology;" in fact, it may be used in connection with practically any distinct branch of human undertaking. How comprehensive then the subject of "economics" has become from a very simple beginning. It concerns every business, every industry, every profession, every line of endeavor, in fact every individual in his life's work. The one factor that is common to all economics is the question of wealth or the means of satisfying desire. The basis or unit of wealth may be defined as a commodity or medium having exchange value, and value may be defined as the ratio of exchange between commodities or a commodity and a standard medium. In the business or commercial world wealth and value may be resolved into terms of commodities. If commodities were the only thing that had value economic problems of the business world would not be so difficult to solve, but commodities are seldom found in nature in a condition to satisfy the needs or desires of man, but they must be brought into such condition by labor. Labor, therefore, becomes the greatest, but not the sole creator of wealth, and for many years it was the most important factor to be reckoned with in economics and special investigators and efficiency men were constantly striving to drive labor to greater effort, more attention being directed to increasing output than to decreasing waste in production. At a recent meeting of the National Management Congress the chief subject of discussion was how to get rid of waste in industry. It was estimated that waste entailed a loss of a half billion dollars in the United States annually and during discussion it developed that more than half of this loss was chargeable to managerial inefficiency, and that not more than 25 per cent could be attributed to labor. The discussions at this Congress brought to the fore perhaps more forcibly than heretofore the fact that nonproductive labor is a more important factor in economics than had been realized. It is not always easy to draw a clear distinction between productive and nonproductive labor, but in the business world all labor whether productive or nonproductive may be considered a commodity having a distinct exchange value depending on its character and regulated somewhat by the laws of supply and demand. It is indeed encouraging at this time that the industrial world has given such high recognition to the value of so-called nonproductive labor. In our social organization there are a number of occupations that belong to this class, and foremost among them stands the practice of medicine. This undoubtedly is the oldest profession in the world, its history dating back to remotest antiquity. It has done more to make possible our present state of civilization than any other single line of human endeavor nor could civilization maintain itself without the knowledge contributed by and the co-operation of the members of the medical profession. Were any argument necessary this in itself is sufficient to establish medicine as an essential factor in our social organization.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

The practice of medicine is in no sense a commodity, but a service—a service which from its very nature stands unique and without a competitor. For years medicine has steadily advanced, contributing its quota to, and participating in, the general fund of knowledge, until it has become perhaps the most comprehensive of all sciences. We need not haggle on the question of whether medicine is a science or an art since it is preeminently both, and its purpose or function is to promote and care for the health and physical well-being of the people. This purpose or function of medicine from its very nature becomes a direct obligation of the profession and everything that pertains to the fulfillment of this obligation must come under the purview of the physician. The physician in satisfying this obligation can do so only by proper personal service and in rendering this service he imposes on the recipient thereof an equal obligation to make proper and reasonable compensation therefor.

The value of medical service cannot be rated simply on the basis of supply and demand nor can it be judged in the same manner as is the exchange value of commercial commodities. There is a personal element that enters into the question of value which does not pertain to any other line of service. There are other factors also which must enter into the computation, such as the need of the services, the attending circumstances, the economic status of the patient and the recognition of the dictates of humanity. Nor can the rates of the past be utilized as a basis for those of the present. During the past few years there have been such radical changes in the living habits of the people, in the progress made in medical knowledge and in the appreciation of this knowledge by the industrial leaders as to greatly modify the economic problems that concern both the people and the profession. We shall now attempt to discuss briefly some of these problems.

The one which seems to be agitating the public at the present time more than another is what has been designated as the high cost of medical care or the expense of being sick. That the expenses connected with illness at present are greater as a rule than they were in former times is true, but few seem to recognize the reasons therefor. It is not many years since hospitals were few and far between and were to be found only in some of the large cities while throughout the land almost every town of any size has one or more hospitals. If these hospitals were not in demand they would not exist. Formerly patients were treated in their homes, but now as soon as the patient is ill he goes to a hospital to be taken care of. One reason for this, particularly in cities, is that so many people no longer have what may be called a home, but live in hotels or in small cubicles, out of courtesy called apartments, often so small that if a member of the family becomes ill there is no place to put him so that he must be carted off to a hospital. This is the beginning of an expense. Another reason for a patient going to a hospital is that he may find there modern devices and equipment so often necessary in the making of a correct diagnosis or for carrying out the most desirable line of treatment. These things all entail additional expense.

Then comes the question of nursing. When patients were cared for in their homes unless very ill nursing was done by some member of the family—a wife or mother, but now even if a patient were to remain at home there would often be no one there to wait on him since every one works but father—but nursing is expensive whether done in the home or in the hospital. Patients are often almost compelled to go to a hospital even when it is unnecessary and when they would prefer remaining at home, since many nurses have become so independent that they refuse to take a case unless it is in a hospital. A well-to-do woman living in a beautiful home and not wishing to go to a hospital as she was not seriously ill, wanted a nurse to come to the house. A nearby hospital, having a registry for nurses, was applied to for a nurse. There were twenty-six nurses on the hospital register at the time waiting for calls. Of the twenty-six nurses called twenty-three refused to take the case because the patient was not in a hospital. That some adjustment here is necessary is self-evident.

The cost of hospital construction is constantly increasing. The cost of diagnostic and therapeutic equipment runs into many thousands of dollars. The cost of modern x-ray outfits may well exceed $25,000.00, a sum beyond the ability of the average physician to meet, and many of these appliances, including chemical laboratories, require full-time, experienced technicians, all of which add greatly to the constantly increasing overhead expense of managing a hospital, and which if the hospital is to continue its existence must be reflected in the cost of service to the patient.

There are also a number of petty expenses, particularly in cities, due to rules and regulations, and to inspectors who but hold down political jobs without knowing anything from the health standpoint about the things they are supposed to inspect, and which in no way affect the patient's welfare, but add to his expense. But be the expense of hospital management in the care of the sick what it may hospitals are here and they have come to stay. They have become an integral and essential part of our social organization. They have saved the lives and added to health and comfort and the happiness of the people; they have been built for the people, and must be maintained by the people; they are a part of the paraphernalia of the medical profession and cannot exist without the constant and direct support of the physician. This latter statement seems to be at variance with the attitude of mind expressed by some lay boards of directors of some of our large hospitals. It is not uncommon to hear it stated that the hospitals are built and managed by the board, that it is the hospital that makes the doctors and not the doctors that make the hospitals, and that by the grace of God and will of the board physicians are allowed to treat their patients in the hospital under the rules, regulations and general supervision of the board. But patients were here and well taken care of by the profession long before hospitals were born. Four walls and a lot of equipment do not make a hospital. No hospital could endure a minute without the medical profession, but there are numerous instances of what has happened to a hospital after losing the principal members of the staff.

The existence of many hospitals throughout the land that are a great benefit and blessing to the people is one of the numerous factors that have materially altered the practice of medicine and brought to the fore many economic problems that greatly affect the welfare of the patients and of the profession. It is and always must be recognized that the primary object to be accomplished is the welfare of the patient, but it is also the imperative duty of the profession to see that its own welfare is not unnecessarily and unjustly sacrificed. The physician who, as is universely recognized, is an indispensable element in our social fabric, cannot be made to suffer through the penalty of misguided philanthropy without a detrimental reaction on the people themselves. It is not surprising that the medical profession, which for ages has devoted its entire efforts and energy to the care of the sick, the betterment of public health and the promotion of the science and art of medicine with little thought of economics, should be slow in awakening to the encroachments that are being made in various directions in the field of medical practice by the great amount of unnecessary charitable work done in hospitals, by the establishment of out-departments by hospitals for the treatment of ambulatory patients, by teaching institutions conducting free clinics in all branches of medicine under the plea of the necessity of securing material with which to teach their students, by the establishment of governmental, municipal, public health and philanthropic free clinics, by the organization of hospitals and medical services by corporations such as railroads and industries, insurance companies, benevolent societies, group practice, the creation of great foundations with almost unlimited means to provide medical service at reduced rates, free inspection of school children, infant welfare stations, prenatal care of mothers, and in other ways. The medical profession has stood alone in its readiness to donate its services to many of these institutions. If it were necessary it would be done willingly, but it is not. Charity is and always has been a dominant trait of the medical profession, but it has no obligation, either moral or ethical, to donate its services under ordinary circumstances to those who are able to pay something for them. Of late there has been a popular and widely advertised complaint made that the majority of people, the so-called middle class, which includes practically everyone between the indigent and the rich, and therefore the great majority, are unable to pay the present cost of high-class medical care and that they must therefore swallow their pride and go to a free clinic or go without medical care or be driven to quacks and charletons. This last statement is too absurd to receive even respectable consideration.

There is no standard or fixed price to be placed on medical service, nor is it possible to have a definite or set price for such service. There are so many variable factors that have to be taken into consideration in almost every case that a flexible scale is unavoidable if justice be done to all. Even in hospitals where the things served the patients come nearer being commodities in a commercial sense, the price cannot always be the same to all alike, but must frequently yield to the exigencies of the case. It is often claimed by business men who are at the head of great general stores or of great industries turning out quantities of manufactured products that the cost of medical service like the price of their articles should be the same to all persons alike. But will any of these men agree that the young clerk standing behind the counter trying to sell these articles should be paid as much as the man of experience who is the head of a department? Do knowledge and experience and skill count for naught? Would one of these men select any physician to do a serious operation on him, or would he choose a physician of known experience and skill, and would he expect the fee of each of them to be the same? There is a great difference in knowledge, experience, skill and judgment of physicians, just as there is in similar qualities of the heads of managerial departments of great business. For many years the medical profession has endeavored in every way possible to elevate the standard of medical education and to see that men of the highest ability and moral and ethical character be permitted to practice medicine in this country, but the great obstacle to the fulfillment of this laudable ambition has been the people themselves. It is by the will of the people themselves that the land is flooded with men who are entirely unqualified to practice medicine, men who are without any scientific knowledge or even an ordinary preliminary education, men who are quacks and charletons deluding the people and preying upon their credulity. This is but another example of what may be called "mass production." A great deal is heard today about this thing of "mass production." It is a wonderful thing in some of the industrial lines and has resulted in decreasing the cost to the people of many articles that are necessary or desirable, but the idea seems to have taken possession of the minds of some of these persons who see in mass production the one cure of most of the economic afflictions that beset the world today. For instance, it was reported in a recent paper that Ford had stated that the cure of a distressing agricultural situation with which the Farm Board is unsuccessfully wrestling is mass production, but he failed to state how something like 7,000,000 farmers tilling millions of acres of land, extending from Maine to California, were to be united in mass production. Mass production has been the key to success in the industrial world and has been the means of making a few men enormously wealthy. It has been the means of reducing the cost of a number of manufactured articles until they have been brought within the reach of the majority of the people, but in so doing they have made mere automatoms or mechanical beings of hordes of men and women and it has even been proposed by these masters of the mills that these persons be treated by the medical profession on the same general principle of mass production and on the basis of one price to all.

In a recent article entitled, "A Merchant Looks at Medicine," it is stated that "unless there is one price to all a business cannot organize for maximum service. It cannot do so because it cannot measure its service." "I personally am not particularly injured by the large fees which the medical profession charges those who it considers can afford to pay, *but the medical profession is injured* through having to make such distinction. It is kept from gauging its services scientifically. The healing business, in other words, is defrauded of any workable economic check upon its activities."

Medical service is not like a staple article on the shelves of a shop to be handed out to all alike at a uniform price. Every person is a specific organism unto himself, having his own desires and his own characteristic reactions to disease and to methods of treatment, hence the absurdity of handling patients on the mass production plan and on the one-price-to-all basis. It is a common thing for lay writers on the cost of medical care to complain that those who are well-to-do pay more for their room and service in hospitals than some poor man who can't afford it but who needs the same kind of service. They seem to think that this is an injustice and that all should be charged alike. Should all tenants pay the same rental for their apartments, regardless of their size and appointment? If each patient paid the same rate as the poor man hospitals could not exist. Hospitals must budget their income and their expenses if they would be self-sustaining. In a recent article on this subject by a layman we find the following: "There is another way in which the student of business must criticize the organization of most of the hospitals and health centers today. They do not make a profit. No business which is any good can be organized purely for profit—business must be organized for profit—nevertheless, if a business does not make a profit it has no way of measuring its service. Business should make a profit. The healing business should be profitable. We should find a way if possible even to make all hospitals profitable. I think we shall find a way in the end, but the medical profession alone cannot find it. It will require the co-operation of all business—the general adoption of mass production methods combined with the reduction of unemployment to a minimum and the raising of wages to such a standard that practically everybody shall be able to pay for all the service that he needs."

This is a most brilliant idea and if it were in actual evidence there would be no problems for the hospitals and doctors to solve, but do all of the very numerous employees of the writer of those words receive the kind of wages that he mentioned? Until the dawn of this Utopian era the managers of hospitals will have to struggle along to make both ends meet by having those who are eminently able pay part of the costs for those who are less favorably situated. Practically every general hospital must do a certain amount of charity, but it is not the charity done to the honest-to-goodness poor that hurts the hospital, but the money actually lost caring for emergency accident cases that are able to pay but won't. These emergency cases due to automobile, street-car and motorbus accidents are a great loss to the hospital, as the injured person brought in always claims that someone else is liable for his bill, such as the automobile owner, the street-car or bus company, and refuse to pay, telling the hospital to collect it from the other party, which can seldom be done. If all of this class of patients were to pay even the per diem cost for their care it would result in lowering the average cost to all patients in the hospital. The physicians caring for these cases seldom receive anything for their services. Corporations and insurance companies carrying accident and compensation insurance are constantly trying to make terms with hospitals for rates which are often way below the average per diem cost, but no hospital should consent to such rates as they are thereby simply causing others to pay a subsidy to such corporations for the privilege of caring for their cases. No convincing reasons have been presented why hospitals should grant rates to such organizations that are below the per diem cost of the care their cases may need plus a reasonable compensation to the physicians rendering the service. Nor has the state any right to determine the rates that a hospital may charge for the care of such patients so long as the rate is an equitable one based on the cost of the care given. The cost of hospital service cannot be standardized for all hospitals since there are too many local and general factors that have to be taken into account and any attempt by the state to regulate hospital rates and physicians' fees should be strenuously contested by hospitals and by the profession.

From what has been said it is perfectly evident that the practice of medicine is being encroached on in a manner and to an extent that is affecting materially the welfare of the profession and it is essential that serious thought be given to these problems and group action taken if disaster is to be averted. While the profession has made remarkable advancement in its science and art, it has been slow to change its methods of carrying on its work to meet the changing times. The world is advancing at a rapid pace while the profession from a business viewpoint is standing still, which means that it is going backwards. Every commercial business, every industry every manufacturing establishment, has found it necessary to alter in many ways their methods of doing business. Even the supreme lawmakers of the land have been forced to change their views in many respects regarding business. The old idea that competition is the life of trade has been outgrown in many instances. It is not so very long ago that the Congress of the United States in its wisdom passed the Sherman Act prohibiting mergers and combinations in the belief that they stifled competition and therefore they were bad for the welfare of the nation, but the same Congress now permits just such mergers and combinations, recognizing that when placed under suitable regulations they stabilize business and render a distinct service to the people. There are certain natural monopolies in business which when merged and combined materially benefit the community, such as, for instance, the American Telephone & Telegraph Co., an enormous corporation whose assets extend into the billions and whose employees number hundreds of thousands. It practically controls the telephone business of the entire country. This organization was not created all at once, but gradually grew by taking over and combining innumerable units which already existed throughout the land. Being now without a competitor in its line it has a distinct obligation which it must live up to and that is to furnish service to all of the people under proper conditions. There are other natural monopolies such as heat, light and electric power organizations, that are undergoing the same process of development.

The care of the sick is a natural monopoly which should rest entirely in the hands of the physicians since they are the only persons qualified by education, knowledge and experience to assume that responsibility. It is not only a responsibility but an imperative duty of the profession which it should not and cannot shirk. Other businesses are constantly making great changes in their methods of conducting their affairs in order to keep abreast of the times, but the medical profession (still bound by ancient and antequated traditions) lags behind in its business methods and in the fulfillment of its unevadable obligation. The medical profession must awaken to a realization of the fact that the individualistic spirit that has dominated its members from time immemorial must yield something to the modern principle of co-operation and mutual support. There must be developed a more evident sense of a group conscience and a greater feeling of constructive group responsibility. In bygone days physicians were not so numerous; the struggle for existence not so strenuous. There were fewer hospitals, out-departments, clinics—both private and public, not so many foundations and philanthropies, and more thrift of the people, which enabled them to pay their physicians who were general medical advisors and counselors. Today things have changed and physicians must meet the changes or suffer the consequences of encroachments on their practice. The inertia of the profession is great. It is almost impossible to get the individual physician who by reason of his ability or his good fortune does not experience the pangs of economic pressure, to soften somewhat his own selfish aims and to lend his influence and support to ameliorating the medical problems of the masses and of the profession as a whole. How is the profession to answer the charge that a great majority of the people are unable to meet the cost of the kind of medical care that they should receive and at the same time enable the physician to be properly compensated for his services? There are two parties whose interests are to be considered in an attempt to answer this question. First, those who are included in the class that it is claimed are unable to pay for high-class medical care, and second, the physicians who render these services.

The class of people under consideration earn more today than they have in many years, if ever. If we take 1913 as the year commonly adopted as the basis of computation we find that in that year wages were taken at 100 as a basis. In 1928 wages had risen from 100 as the basis in 1913 to 235 as the basis. Living expenses on the basis of 100 in 1913 had risen in 1928 only to 170. The relative purchasing power of wages as measured in living costs was 138.2, which means that there is an increase of 38.2 per cent in the surplus of wages over living costs in 1928, compared with 1913, the scale of living being the same in the two years. This shows that the wage earners were much better off in 1928 than they were in 1913 and therefore better able to meet their ordinary living expenses. In 1913 there were 11,109,499 depositors in savings banks in this country having on deposit $4,936,591,849.00. In 1927 these figures had increased to 14,814,271 depositors and to $9,738,902,000.00. During this period the number of depositors had increased 33 1-3 per cent, while the deposits had increased 100 per cent. In addition to this there were $147,359,254.00 balance to the credit of depositors in United States Postal Savings and $6,334,103,807.00 in Building and Loan Associations, a grand total of $16,222,365,061.00. As is well known it is neither the rich nor the indigent poor who are the chief depositors in savings banks and United States Postal Savings, but the so-called middle class. During the year ending June 29, 1928, the savings deposits increased $2,500,000,000.00, but during the next twelve months they decreased $195,000,000.00, due to the speculative craze that drew nearly everybody into the flame to be singed. It may be claimed that these figures are evidence of the great thrift of the American people, but that can be allowed only insofar as it pertains to a certain percentage of the people —a percentage that are honest and industrious and who are able and willing to pay reasonable bills for medical care. But there is another large percentage of the people that claim they are unable to pay what they term the high cost of medical care for the ordinary or average illnesses of themselves or members of their families, nor do I indulge in this group the downright poor or indigent nor the unfortunate victims of a chronic illness or of unusual circumstances. These cases will be discussed later, but I include that large and apparently growing class that are always in debt, who feel that they must enjoy all the pleasures in life and have all the luxuries in order to keep up appearances or to satisfy their selfish ends, who are from one to two years ahead of their income which has been pledged on the installment plan for purchases of things or luxuries not needed. The installment plan of purchasing by this class is one of the greatest curses of the age.

The present depression in business is usually ascribed to the Wall Street crash of last Fall, but there is another reason. The optimistic spirit of the times led manufacturers of all kinds to overproduction. High-pressure salesmen in order to keep the goods moving induced the people to buy things on the deferred payment or installment plan until their incomes above the actual necessities of life had been pledged for from one to two years in advance. Now comes the financial crash with great losses to so many. Money became scarce; people were overstocked with goods. Factories had to reduce their help; unemployment increased and business depression resulted. It is public lunacy to decree unlimited operation of a system which periodically disgorges indigestible masses of unconsumable products. To mention but one example —the business of the automobile industry is only about 50 per cent so far this year compared to what it was during the same period last year. About 85 per cent of the automobiles are sold on the installment plan.

It is this class of people, the installment payers, that make no provision in their budget for possible illness, something which everyone should realize is almost certain to occur sooner or later. It is this class when illness overtakes them and they must go to a hospital that want the best that the hospital can provide. They want an expensive room when a less expensive one or a semi-private one would answer every purpose; they demand a special nurse when the same is entirely unnecessary, and when they have a special insist on keeping her beyond the needed time, thus giving little thought to the cost of it all. It is from this class that comes most of the complaints that are heard in hospitals about the high cost of medical care or the character of the services received.

But what about the profession, the second party whose interests are concerned in this discussion. The profession should have more to say in the management of hospitals. It should not permit lay boards to dictate to it in matters entirely medical. When the question of ability to pay comes up the physician should be the one to decide the kind of a room that the patient should have. He should decide whether a special nurse is necessary or not. He should determine the kind and amount, if any, of laboratory work that should be done and not allow the patient to run up needless bills, as thereby he will protect the hospital against loss and at the same time the patient against unnecessary expense. There must be mutual concessions made by physicians and hospitals in the care of patients of limited means so that both may be reasonably compensated.

The time is now here when it is essential that physicians become organized not simply for scientific purposes as such an organization of the highest character already exists in the American Medical Association, but organized for business purposes.

There must be developed in the minds of physicians a more vivid group conscience, a more acute sense of constructive responsibility, a higher appreciation of the absolute necessity of mutual co-operation and an earnest desire for a unification of interests. Individualism pertains to the physician's care of his patient, but collectivism must prevail in matters relating to the profession as a whole, since anything that affects the rights or interests of the profession must sooner or later affect those of the individual himself. The unit of organization of the American Medical Association, the county society, should be the unit of a strong business organization. Its members should consist of all the qualified, reputable physicians in the county and its functions should be to look after the material interests of the profession and it should provide for the fulfillment of its full obligations to the people of the community, which is to make suitable provision for the care of all the sick all the time. Those patients who are able to pay the usual fees of doctors will have their private physicians as at present, but the members of this business organization will constitute themselves into a group clinic for the purpose of treating all patients who are unable to have their own physician. This is not to be in any sense a free clinic, but a place where all those who are unable to pay the usual fee can be treated and pay for the same according to their financial ability. This clinic must be properly equipped for the diagnosis and treatment of all kinds of ailments and must be managed and conducted by the profession and run on a purely business basis.

It is only necessary to inoculate a county medical society that is already functioning in a scientific way with the business spirit and to have its members recognize the urgent need of assuming control of medical affairs to spur them to action before it is too late. There is always some doctor in every county medical society with sufficient business ability to manage such an organization and, if not, a business executive should be employed to do the managing, as the organization properly managed would be a paying investment from the beginning since a great deal of money is constantly being lost to the profession by the great amount of free services given in municipal, philanthropic, public health and other clinics, which is not only unnecessary but an ultimate detriment to the welfare of the community and which would not exist if the medical profession would take control of its own business and fulfill its obligation of caring for the sick. In practically every community there are a few persons more or less who are unable to pay anything for medical service. These persons would be taken care of at the society's clinic, but being charges on the community, the public authorities would pay for their care at reasonable rates to be agreed upon. A similar arrangement is already being carried out by some county medical societies in treating the county poor.

The money that an organization of this kind would make could be used to provide a common library, for the use of its members to arrange for postgraduate instruction, thus improving the character of the services given, to pay for technicians who would do the routine work of the society, or used in any other manner for the benefit of all.

In closing, permit me to say that I realize thoroughly the difficulties attending an attempt to bring together in a mutual, cooperative organization a group of liberty-loving men who live an independent life, their thoughts and actions controlled only by their own conscience and free will, but I have faith in the good sense of the profession, and if they can be made to see that their very independence of thought and action is seriously threatened by changing economic conditions that they will rise to the occasion, bury their envies and petty jealousies and unite in friendly co-operation for the good of all.

CHLOROMA: REPORT OF A CASE*

RALPH MONGER, M.D., Knoxville

THE name Chloroma has been applied to certain tumors of rare occurrence characterized by a definitely green color. These tumors are usually connected with the periosteum, often involving the bone marrow and sometimes occuring in lymph nodes and elsewhere in the body. Burgess (1) states that in 1912 about 60 cases had been reported in the literature. In every instance the disease ran an acute course, usually lasting weeks or months and only once reaching one and one-half years duration. Most of the cases were in children, a few in infants and some in adults. The average age is about twenty-three years and the disease occurs more often in males than in females. The most common symptoms are weakness, anemia and a tendency to hemorrhage.

Exopthalmos has very frequently been present and has been found to be due to the presence of green tumors in the orbital fossa. Diagnosis has been made during life in several instances by noting the presence of green nodules in the skin or elsewhere. At autopsy the tumors have been found in various parts of the body. In almost all of the cases nodules have been found attached to the perisoteum, often that of the skull, ribs or sternum. In all cases in which the bone-marrow was examined it was found altered in appearance (green in five cases). Three cases showed merely green bone-marrow and no tumors; one case green bone-marrow and periosteal tumors; while usually the distribution of the tumors was more general. Among the more common locations other than the bone-marrow and periosteum may be mentioned lymph nodes, kidneys, tonsils and skin.

In a few cases it was noted that the blood clot in the heart was distinctly greenish, and in one the sedimented leukocytes formed a green layer.

Until recent years chloroma was regarded as belonging to the tumors of lymphoblastic origin.

In all cases where the blood was examined the stained specimen showed the picture of leukemia.

In thirty such cases twelve showed a high percentage (60 to 95 per cent) of mononuclear cells with non-granular cytoplasm and no granular mononuclears; eight showed a preponderance of non-granular and a small proportion(less than ten per cent) of granular mononuclears, while in ten cases granular cells, myelocytes, were in excess, varying from 10 to 54 per cent. Thus in every instance the records may be said to present either the picture of what is ordinarily called "acute lymphatic leukemia," or of acute myelogenous leukemia, or some stage of variation between the two.

Burgess (1) believes that these tumors do not constitute a pathological entity, but merely a part of the pathological process in one type of acute myelogenous leukemia. He feels that chloroma has not been shown to have any relation to true lymphatic leukemia.

Myelogenous leukemia is a blood metastasis of a true tumor whose origin is in the bone-marrow and whose cells invade the blood stream and bone-marrow.

In certain cases in which the cells are, most of them relatively undifferentiated and multiply rapidly, other tissues are invaded.

Sometimes in this way nodules or masses of tumor cells are formed. These masses if green are called chloroma.

The gross anatomical features of this disease were first detailed by Burns (2) in 1823. Waldstein (3) was the first to make blood studies in 1883. Dock (4) in 1893, on the bases of blood and other studies, first pointed out the relationship of chloroma and leukemia, and Dock and Warthin (5) in 1904 definitely established this point.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

In 1905 Sternberg (6) divided chloroma into two groups, lymphoid and myeloid.

In 1909 Pappenheim (7) classified the disease into hyperplastic chloroma and chlorosarcoma with related intermediate forms. He regarded leukemia chloroma and myeloma as somewhat similar disease processes of the hematopoietic system.

In 1910 Lehndorff (8) tabulated all cases up to that time, a total of 73, of which 56 were lymphoid and 17 myeloid chloromas.

In 1912 Burgess (1) brought forth strong and convincing reasons to show that chloroma was always a myeloid process. He pointed out that many so-called lymphoid leukemias, if more completely studied, would prove to be acute myelogenous cases. The essential point is differentiation of the large mononuclear cells of the blood and those composing the tumors in chloroma.

Askanazy (9) has logically argued the occurrence of myeloid chloromas.

Brannan (10) has reviewed all cases reported since Lehndorff's paper of which there were 74 including his own case. Of these 49 were definitely myeloid, but 11 of these were more or less atypical or borderline cases. Only one case was stated definitely to be lymphoid. The remaining 25 cases were poorly studied and doubtful; indeed, some were probably not chloroma at all.

There remain 56 certain recent cases which added to the 73 reported by Lehndorff makes a total of 129 cases reported up to 1925.

In the majority of the 49 cases considered to be of myeloid origin the diagnosis was based primarily on the blood picture, the histological structures of the tumor tissue and bone-marrow.

Except for a few cases of aleukemia, there was in all definite acute or chronic myelogenous leukemia. In the vast majority of cases, the cells composing the green tumor masses and bone-marrow, as well as those in the blood, were large undifferentiated non-granular mononuclear cells, the myeloblasts; with or without a few or many neutrophilic and eosinophilic myelocytes, the latter being especially numerous. In fifteen of seventeen cases the oxidase or peroxidase test was positive.

A noteworthy feature of the color of these tumors is the prompt fading in the presence of light and air, but in tissue fixed in formalin it was generally temporarily restored by the addition of hydrogen peroxide.

Practically all authors except perhaps Meyer and Berger (11) agree that the chemistry of the color is unknown. Here and there in the literature it is suggested that it is perhaps a lipochrome. Askanazy (9) considers the green color peculiar to myeloid cells and point out the occurrence of greenish colored pus in support of his idea. No one has ventured to explain the ethology of the disease.

Clinically the symptoms described were essentially those of leukemia, namely, insiduous onset, progressive weakness, under-nutrition, pallor and hemorrhages; frequently with enlarged liver, spleen and lymph nodes, and often with pains in the long bones and the sternum. The anemia was almost always considered as secondary.

With this brief review of the literature, I wish to present an additional case that I have had opportunity to study clinically, and also post-mortem.

W. C., colored male, age 16 years; occupation, student; admitted to hospital 1-10-24, expired 1-23-24. Chief complaint shortness of breath, duration one and one-half years. Constipation, earache, facial paralysis right side, all duration three weeks; cough and weakness.

Present Illness: Without history of rheumatism, sore throat, scarlet fever, or diphtheria, patient has been dyspnoeic on exertion for one and one-half years. Was able to go to school, and is a Freshman in high school, until three weeks ago when he developed earache in right ear and face became drawn to left side. The right eyelid drooped somewhat, has had some fever. Has lost five pounds in weight in the past three weeks. Obstinate constipation, claims bowels have not moved for three weeks. Has had some nausea and vomiting. No abdominal pain. Pain in right side of thorax. Has spit up some blood. No night sweats.

Past History: Had measles and a skin eruption about two years ago, character not determined.

Family History: Two brothers and two sisters died in infancy, cause unknown. Mother died of some obscure disease which had a duration of four months.

General Appearance: The essential features of the physical examination showed a rather well-developed but emaciated negro boy, sixteen years old, with obvious right sided facial paralysis. A languid, rather asthenic demeanor, deaf and can hear only when spoken to very loudly. The mouth drawn to the left, right side of face smooth and natural folds erased. Right upper eyelid droops some. No auricular discharge. The chest shows the right side to move less, to be less resonant, and more rales than left side. Most of rales in upper right chest and back. Heart: the first sound at mitral area markedly accentuated and followed by a blowing systolic murmur; pulmonic second sound accentuated. Physical examination otherwise negative.

Laboratory: The blood count on admissions was as follows: Hemoglobin 15%, total red count 800,000, total white count 16,500. Differential: Polymorphonuclear 32%, lymphocytes 32%, large mononuclears 30%, myelocytes 5%, slight anisocytosis and poikilocytosis. Two nucleated red cells present. Three days later a blood transfusion was made and blood count after this showed 35% hemoglobin and 3,700,000 red cells. Blood count prior to death showed 20% hemoglobin, total red count 1,350,000, total white count 35,000. Differential: Polymorphonuclears 30%, lymphocytes 16%, large mononuclears 6%, transsitional 7%, myelocytes 20%, myeloblasts 3%. Urine on admission was negative, but a few days before death showed 1 plus albumin, 2 plus granular casts, and a few pus cells. Wasserman was negative. Many blood cultures were negative. Spinal fluid showed pressure 160 mm. (water). Appearance clear, cell count 37, otherwise negative. Stool examinations negative.

X-Ray: Films of the chest showed cardiac enlargement in all diameters. Lungs showed hilum shadows increased and radiating from the lung roots there is mottling of a granular appearance. No evidence of tuberculosis. Stereoscopic plates of skull show no deviation from normal. Plates of the extremities were normal in appearance. The temperature varied from 98.6 to 101.

Progress in Hospital: General impression after examination was as follows: In view of the general septic appearance of the patient, short duration of illness, cardial enlargement, mitral systolic murmur, indefinite pains and gastro-intestinal symptoms, the possibility of subacute bacterial endocarditis is strongly suggested, despite the temperature curve being far from typical. After the blood findings, however, the picture is very strongly suggestive of aleukemic leukemia. Patient complained of pain in abdomen and was irrational at times, until three days after admission blood transfusion was given and he then felt better, drank plenty of water and had a good appetite. Six days after admission he complained of tenderness in right cheek, examination of this area showed slight swelling and slight reddening of the mucous membrane. The dental service was consulted and at this time there was some ulceration of the mucous membrane suggestive of noma. The otologist was consulted for the deafness and he stated the condition was a suppurative otitis media, but it may be due to a hemorrhage into the internal auditory caral, catching the eighth nerve. The patient developed a progressive odema of the lungs and expired at 10:20 p. m., thirteen days after admission.

Diagnosis made before autopsy was:

Acute myelogenous leukemia.

Necrosis of right upper gum with extension to buccal surface.

Right side Bell's palsy.

Broncho pneumonic right side, upper part lower lobe.

Acute nephritis (tentative).

Autopsy done ten hours after death by the writer showed the following:

Chloroma involving: Mediastinal and intercostal lymph nodes; sternum; intercostal, semispinalis cervicis and spinalis dorsi muscles; liver; kidneys; Dura Mater; anterior surface petrous portion of temporal bone, bilateral, most marked on right side; mucous membrane right side of mouth.

Hypertrophy and dilation of heart.

Sub-epicardial petechial hemorrhages.

Chronic adhesive pleurisy, lower lobe of right lung.

Multiple miliary hemorrhages both lungs.

Edema of lungs.

Splenomegaly.

Hepatomegaly.

Body is that of a well developed, fairly well nourished, colored male, who looks to be about 16 years old. There is a scanty growth of hair over the face. The pupils are equal, and the conjuctive show no abnormalities. There is a frothy fluid oozing from the nose. The teeth are in bad condition, and in the right side of the mouth, along the gums of the upper teeth and extending upward over the mucous membrane of the mouth, there is a large irregular, ulcerated area, which is of a greenish color. The skin is dry and in some areas, especially over the lower extremities, scaly.

Abdomen: The mesenteric lymph nodes are slightly enlarged. The liver is large and extends 8 cm. below the costal margin. Spleen is enlarged, and there are a few old fibrous adhesions between the upper pole of the spleen and the diaphragm.

Thorax: On the posterior surface of the sternum, there was an area extending the entire length of the bone which was of a green color and about 2 to c mm. thick; and which extends down to and appears to slightly invade the bone. The visceral and parietal surfaces of the pleura there were many small, punctate hemorrhages visible. There were old, fibrous adhesions between the base of the right lung and the diaphragm, which also extended for a short distance upward over the lower lobe of the right lung. There was 100 c.c. of a clear, straw-colored fluid in the left pleural cavity. When the lungs were removed there was an area along the spinal column which extended for 7 to 10 cm. on both sides of the vertebræ in the cervical and dorsal areas. In this area there were numerous larger and smaller, broad, flat masses varying in size from 6 cm. to 4 cm. in diameter; and on section some were 1.5 cm. thick and others a few mm. thick. These were of a green color and had a firm consistency. They extended down to, but did not appear to involve either the bodies of the vertebræ or the ribs; but were disseminated throughout the intercostal muscles. On the anterior surface of the eighth rib of the left side, about the middle portion, there was an area similar in appearance to those just described, measuring 3x2 cm. On section through this it was 5 mm. deep and extended down to, but did not involve the periosteum or bone.

Pericardium: Normal.

Heart: 350 gms. Over the right auricle there are several, irregular areas of a yellowish-green color. There is a very small amount of epicardial fat. Beneath the epicardium, over the entire heart, there are numerous, small punctate hemorrhages. In some areas, the epicardium has a pale yellow color. The myocardium is pale in color. The left ventricle in the middle part measures 15 mm. in thickness, and the right ventricle measures 6 mm. The endocardium is very pale, and beneath this there are several small, pale, yellow areas and an occasional small punctate hemorrhage.

Left Lung: 600 gms. The pleura is thickened, and there are several areas covered with firmly adherent, fibrous adhesions. On the posterior surface of the lung, in the upper lobe there is an area 5x3 cm., which is of a green color, is thin, and this area was in contact with one of the green nodules previously described. Beneath the thickened pleura there are numerous larger and smaller, light and dark red areas, and in the intervening portions there are areas of a pale yellow color. The lung has a firm consistency, but is air containing throughout, except for a small area in the lower lobe. On section, the cut surface shows a pale red background, over which there are numerous larger and smaller areas (the largest being about 8 to 9 mm. in diameter, and the smallest pin-point size), which are of a dark red color. On pressure a frothy fluid exudes from the cut surface. The mucosa of the bronchi is pale and the lumen contains no abnormal contents.

Right Lung: 850 gms. The external surface is similar in appearance to the left, except that the fibrous adhesions over the base are more marked. On palpation the consistency is increased, but the lung is air containing throughout, except for a small area along the posterior surface of the lower lobe. On section, the cut surface is similar in appearance to the cut surface of the left lung. Bronchi are also similar in appearance to those of the left lung.

Liver: Weighs 2,150 gms. Measurements 29x22x6.5 cm. The capsule is smooth and the external surface is of a red color; but beneath the capsule there are numerous small, pale, yellow areas. On section the cut surface is of a red color, and shows the center of the lobules to be small, irregular in size and shape, and of a pale yellow color, surrounded by a wide, pale red peripheral zone. Near the hilus, around some of the larger vessels, there are areas which are of a green color. These average from 5 mm. to 10 mm. in size.

Gall Bladder: Normal.

Spleen: 160 gms. Measurements 12x9x2.5 cm. On the external surface there are a few tags of old fibrous adhesions. The remainder of the surface is smooth and of a purplish color. The consistency is firm. On section the cut surface shows a firm pulp in which there are several small red areas, and a few areas which are pale yellow in appearance. The mapighian follicles are poorly defined, but the trabeculæ are visible.

Kidneys: Left weighs 275 gms. Right weighs 250 gms.

Left Kidney: Measures 14x8x4 cm. The capsule strips easily, leaving a smooth, external surface which is very pale. Scattered over the external surface there are a few small, retention cysts, and many small, irregular, light red areas, and also many small areas which are pale yellow in color. On section the cut surface is very pale. The cortex is 7 mm. thick, the cortex and medulla together are 38 mm. thick. The line of demarcation between the cortex and medulla is very poorly defined. The normal cortical striations are absent. In a few areas an occasional glomerulus is visible as a pale red dot. There is one area in the cortex which corresponds to one of the red areas seen externally which has a greenish color, and the consistency is softer than the other portions. In the pelvis, extending upward through the infundibulum, the calyces and around the papulæ of the medullary pyramids, there is a flat mass of green color, 2 mm. thick and of a firm consistency. This is not adherent to the mucosa of the pelvis, and is easily removed. The medullary pyramids are pale, and the striations are poorly defined.

Right Kidney: Measurements 14x8x3.8 cm. The external surface is similar in appearance to the right, except over one portion there are many areas which are of a green color, project above the surface, and are sharply demarcated from the kidney substance. These average from 8 mm. to 2 mm. in size. On section, the cut surface shows the cortex to be 8 mm. thick. The cortex and medulla are 38 mm. thick, and the cut surface is in all respects similar to other kidney, except that the green colored areas are present only in the infundibulum and calyces on the lower pole of the kidney.

Stomach, intestines, bladder, prostate and testicles are normal in appearance.

Lymph Nodes: The tracheo-brochial lymph nodes were moderately enlarged, and on section were pigmented throughout, but they did not show an involvement by this tumor. The mesenteric nodes were slightly enlarged, but showed no gross abnormalities.

Tibia: The bone-marrow is red in color.

Brain: 1400 gms. When skin was removed there was a large area between the periosteum and skin, which was of a green color and covered almost the entire external surface of the skull. This has a firm consistency and varied in thickness from 1 cm. down to a few mm. The dura mater showed one area, measuring 3x1 cm. of a green color, in the region of the Archnoid Villi. The pia mater was pale in color and there was no exudate found. On examination of the base of the skull there was found over the anterior surface of the petrous portion of both temporal bones (most extensive on right side) in the region of the Eminentia Arcuata, green areas measuring 2x1 cm. On section through these areas, this green color was found to extend down into the external labyrinth. In the maxillary sinus of the right side there was the same green areas; however, only a small amount. Both orbits, ethmoid, sphenoid, and frontal sinuses were explored and carefully searched, but no abnormalities were found.

Spinal Column: When skin was removed, throughout part of semispinalis cervicis and spinalis dorsi muscles, there were these small green areas, which were most extensive in the muscles, between the transverse processes of the vertebræ. These were apparently an extension from the areas in the thoracic cavity by way of the intercostal muscle. No vertebræ were found involved. A few cm. above the conus medullaris there were a few adhesions between the dura and the vertebræ. Scattered along the cervical and dorsal regions there were a few green areas, between the dura and bone.

MICROSCOPICAL

Section taken from tumor mass is made up primarily of cells. These cells vary somewhat both in size and shape. The majority have large nucleii, which are located both excentrically and eccentrically. The nucleus is hyperchromatic, and frozen sections with oxydase stain shows several purplish granules in the cytoplasm. The stroma is composed of a fine recticulum of connective tissue, and this is substantiated by Van Gison's stain. There are several vacuoles scattered throughout the section, but frozen sections stained with Scarlet R. do not show any fat granules. Sections from the kidney showed myeloid chloroma infiltration and fatty degeneration of the tubular epithelium; of the heart a myeloid chloroma infiltration of myocardium; of the liver a diffuse myeloid chloroma infiltration producing atrophy and compression of the liver cells and fatty infiltration of liver; of the lungs broncho pneumonia with marked odema and congestion; the lymph nodes and testis showed a diffuse chloroma infiltration throughout.

SUMMARY

1. This is an additional case of myeloid chloroma.

2. The only apparent involvement of the bones in this case were those of the skull and sternum.

3. These green tumor masses should be watched for in cases of atypical leukemia.

REFERENCES

(1) Burgess: Chloroma J. Med. Res. 22, 133; 1912-13.

(2) Burns, A.: Observations of the surgical anatomy of the head and neck. Baltimore, 1823, p. 386.

(3) Walstein, L.: Ein Fall von progressiver Anamie U. darauffobgender Leukocytheime Mit Mnochemmarkerkrankung und einer Chloroma. Virchow's Arch. 91:12, 1883.

(4) Dock, G.: Chloroma and its relation to leukemia, Am. J. Med. Sc., 106-152, 1893.

(5) Dock, G., and Watthin, A. X.: A New Case of Chloroma with Leukemia; a study of cases reported since 1893; Med. News, 85:971, 1904.

(6) Sternberg, C.: Zur Kenntric des Chloromas; Ziegler's Beitrage, 37:437, 1904.

(7) Pappenheim, A.: Die Stellung der Chlorome und Myelome unter den Primarerkrankungen des Hematopoetischen Apparats. Fol. Hemat., 7:439, 1909.

(8) Lehndorff, H.: Chloroma. Ergebn. d. inn. Med. U. Kinderhlk, 6:221, 1910.

(9) Askanazy, M.: Personal Researches on the Nature of Chloroma. Int. Clinics, 1:67, 1917.

(10) Brannan, D.: Chloroma. Bull. Johns Hopkins Hosp., 38:189, 1926. A complete bibliography is appended to this article.

(11) Meyer, P., and Berger, L.: Contribution a letude de chlorome. Arch. d. mal. cocen. d. Vaisseaux et de saug, 17:39, 1924.

MEDICAL EDUCATION IN TENNESSEE*

(AN HISTORICAL SKETCH)

Otis S. Warr, M.D., F.A.C.P.
The Polyclinic, Memphis, Tenn.

PIONEER conditions largely explain the educational chaos in the United States which for three-quarters of a century hindered the progress of the medical profession. The rapid expansion of population over a wide territory created a demand for doctors before there existed facilities for their proper training or means for their proper support. As a result, the proprietary medical school, "an affair of lectures, quiz, and cram", came into being. In all, more than four hundred such schools, where loosely associated groups of practising physicians endeavored to impart their empirical knowledge—sound and unsound—to a horde of heterogeneous, uneducated students, have served their day in this country(1).

The first advance in medical education came when the proprietary medical school tended in course of time to settle about a hospital. Intense competition and resultant rivalry, however, impeded the progress which this improvement offered. One kindly critic apologizes for the proprietary type of school in these words: "One can decry the system of those days—the inadequate preliminary requirements, the short courses, the faulty arrangement of the curriculum, the dominance of the didactic lecture, the meager appliances for demonstrative and practical instruction—but the results were better than the system(2)." Indeed, eminent men developed to grace the profession, despite the system, perhaps, rather than because of it.

The modern conception of medical education has made its way rapidly. A new era of medical history dawned with the opening of the Johns Hopkins Hospital in 1889 and the Johns Hopkins Medical School in 1893 (3). Medical schools now are fewer in number, though still unnecessarily numerous, and they are almost all, in form at least, university departments. Marked elevation of standards and vast expansion of the curriculum, both in academic and in professional training, have revolutionized medical teaching. When President Eliot in 1870 proposed the adoption of written examinations in place of the customary five-minute oral examination by each of the professors in the Harvard Medical School, he met with this objection: "Written examinations are impossible in the Medical School. A majority of the students cannot write well enough(4)." Many students with very little college education, or none at all, graduated from some of the best professional schools of that day in one session. Today, the desire to cultivate scientific medicine has become widespread, and in very recent years has forced upon existing medical schools the diligent pursuit of better academic company.

From a survey of higher education in the South it becomes evident that medical education has not been neglected in this section of the country. Following the founding of the Maryland College of Medicine at Baltimore in 1804, the number of institutions grew through the years until the turn of a new century found in the South fifty-six medical schools with an aggregate annual enrollment of over 8,600 students and about 1,800 annual graduates. Eleven of the fifty-six were in Tennessee(5). Perhaps this state offers as interesting an example as may be found of the evolution of medical education within a southern state. There is record of eighteen attempts at education in this field within its borders, and eleven of the institutions were in operation simultaneously. Of the eighteen schools, varying widely in character and resources, twelve have been for white students and six for negroes. As experience and changing conditions within the state have furthered the progress of medical education, so sweeping has been the process of combination and elimination that today there remain but three centers of medical teaching, the School of Medicine of Vanderbilt University with its philanthropic backing, the College of Medicine of the University of Tennessee with its needs being cared for by the state, and the Meharry Medical College, a worthy and efficient institution for negroes.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

In a speech before the Tennessee Medical Association in 1838, Dr. L. P. Yandell(6) expressed the view of the pioneer doctor regarding the scope of medical education when he emphasized three essential factors: teachers inspiring students to self-directed study, varied and adequate equipment, and a sufficient number of patients easily accessible. This broad outlook could hardly be improved upon today except by adding research and public hygiene. It was in the extreme western portion of the state, eight years after this address was made, that the first medical school was established, and Dr. Yandell for a time served as its dean.

THE MEMPHIS MEDICAL COLLEGE

The city of Memphis claims the distinction of being the home of the first medical school in Tennessee. By 1846 the medical profession had grown to such flourishing proportions in the growing Bluff City and had attained such wide importance in the surrounding territory that the Memphis Medical College was launched in response to popular demand. There was a faculty of eight professors, each of whom contributed $1,000.00 to the enterprise, and the public added a small sum for equipment(7). This institution enjoyed its heyday in the fifties. In 1852, when consolidation was effected with the Memphis Institute, professors' tickets were placed at $105.00 a session, and good board was advertised for students at from two to three dollars a week. The sessions began in November, lasting about four months. The highest number of graduates, nineteen, was for the 1854-55 session. The faculty list boasted such names as Dr. Lewis Shanks, a most successful and devoted dean as well as a fluent teacher; Dr. H. V. Wooten, one of the ablest lecturers on the principles and practices of medicine in the United States; Dr. A. P. Merrill, of wide reputation as a journalist and practitioner, and Dr. John Millington, who had for thirteen years occupied the chair of chemistry at the medical school of Guy's Hospital, London, and who enjoyed international renown in his chosen field(11).

In 1859 Drs. L. P. Yandell, Sr., and Jr., purchased a controlling interest and reorganized the faculty with Dr. Yandell, Sr., as dean. During the three years which followed up to the outbreak of the Civil War, when operation was necessarily suspended, the school prospered, having some thirty graduates at the close of the 1860-61 session. After the war the school was revived and enjoyed fair prosperity for five years, but, despite a graduating class of twenty for the 1871-72 session, the school was at that time abandoned. The reason given was that the faculty did not care to resort to the underbidding methods of other schools in sister cities(8). There was for a period covering the last three years of the institution's existence a nominal connection with Cumberland University at Lebanon(16) (31).

THE BOTANICO-MEDICAL COLLEGE

To further the interests of the botanical school of medicine, which was very popular at the time and well represented in Memphis and in the entire Mississippi Valley, the Botanico-Medical College was founded, also in 1846, and it, too, was located in Memphis. The first announcement stated that its teachings would be strictly eclectic, notwithstanding the name, "Botanico-Medical." The first session was opened in November, 1846. Continuous operation for a period of fourteen years, with an average annual attendance of fifty-four students, was interrupted by the Civil War. During the war the college building was burned, and afterward the school was never resumed (12) (9) (32).

THE COLLEGE OF MEDICINE OF THE UNIVERSITY OF NASHVILLE

The third venture in medical education in the state was undertaken at Nashville in

1850. A quarter of a century prior to this, even before Cumberland College became the University of Nashville, a movement was started to found a medical school in connection with that institution, and would indeed have been readily consummated, had President Philip Lindsley's dream of an ideal university with its many colleges been realized. In a public speech, delivered in 1837, this brilliant and intrepid pioneer educator, speaking of a desire to install faculties of law and medicine at the University of Nashville, said: "Such faculties might be organized immediately were we content to be on a par with Harvard, Yale, and Virginia. But one or two professors of Law, and three or four of Medicine would not meet our views(35)." The project languished until the movement which finally terminated in success was inaugurated late in 1850, at the very time when circumstances forced the final cessation of the literary department of this famous pioneer institution.

Dr. W. K. Bowling, who had long cherished a seemingly utopian dream of a medical school in Nashville, and Dr. J. Berrien Lindsley, distinguished son of the illustrious Philip Lindsley, and himself a towering figure in the annals of Tennessee education, were the moving spirits in the new enterprise. They formed a medical club, which later became the first faculty, secured the privilege of establishing a Medical Department of the University of Nashville with complete autonomy, and leased the university property for this purpose. The original faculty list comprises an imposing array of names: Drs. John M. Watson, A. H. Buchanan, W. K. Bowling, C. K. Winston, Robert M. Porter, J. Berrien Lindsley, Paul F. Eve, and William Briggs(36). Dr. Lindsley became the first dean, upon whose shoulders "devolved the duty of managing the entire machinery at home and representing the institution abroad"(17).

That eminent physician and teacher, Dr. Menees, described the inception of the Medical Department of the University of Nashville in these words: "The department, guided by the wisdom and impelled by the ardor and enthusiasm of its gifted founders, burst, like Minerva from the head of Jupiter, at once into maturity, in full panoply and rich in all the appointments of utility, and commanded the largest first class that any institution of the kind had ever done in this country, and I doubt not, I may add, in the world"(39). The investment was a paying one from the start and although Nashville was a small city, her medical school competed successfully with the old and well-established schools of Louisville and Philadelphia.

For the first session, opening in November, 1851, there were 121 matriculates and 33 graduates. The attendance grew steadily until the acme was reached in 1859-60, when 456 students were enrolled, and in point of numbers the school now ranked second among the medical colleges of the United States(36) (18). Two winter courses of four months' duration were required for graduation. Summer courses, largely practical in character, beginning in April and continuing for four months, were inaugurated in 1855, but were not compulsory.

Through all the dark days of the Civil War period the doors of the medical college were never closed. When the Federal troops took possession they found Dr Lindsley and three professors teaching some forty students, and instruction continued even while the building was being used as a hospital. During the four years of military occupancy it was Dr. Lindsley who cared zealously for the university property. One recorder says: "While the battle of Nashville was raging around the city and cannon were booming from Fort Negley nearby, young men were being trained to go forth and heal the wounded and minister to the dying. The medical faculty could afford to indulge in a burst of exultation over the past and of hope for the future"(19). Statistics show, however, that the school never recovered its antebellum prosperity. In February, 1861, when the rumblings of civil war were growing loud, there were nearly 400 students in attendance and 141 graduates. For the next fifteen years the attendance ranged from

32 to 240, averaging 150. These figures speak for themselves (36) (20).

On April 21, 1874, the medical faculty entered into an agreement (21) (36) with Vanderbilt University whereby Vanderbilt adopted the faculty of the medical department of the University of Nashville with the provision that students matriculating in the former institution should be graduated under its auspices and receive its diploma, while the matriculates of the latter should be graduated as before. Vanderbilt assumed no pecuniary liability whatsoever. This change no doubt attracted students, for it brought to the College of Medicine of the University of Nashville the prestige of an institution under the patronage of a great church and supported by an endowment far greater than that of any other school south of the Ohio River. Soon, however, the majority came to matriculate in Vanderbilt, and before long in the medical school the name of Vanderbilt University began to eclipse that of the University of Nashville. The agreement between the two institutions was dissolved in 1895 (33).

From 1851 to 1880 the medical school of the University of Nashville had nearly 7,000 matriculates and 2,200 graduates, and its faculty in this period furnished to the American Medical Association two presidents and five vice-presidents, an honor up to that time conferred upon no other college in America. During the decade of the eighties the number of students averaged 235 and the number of graduates 107 annually (40) (20). At this same period the Medical Department of the University of Tennessee was flourishing in its Nashville quarters with an average annual attendance of 171 and a graduating class of 61 annually.

By 1909 the field of medicine had expanded to such vast proportions that, in order to deal with the subject adequately, the medical schools of the University of Nashville and the University of Tennessee, which had for thirty years operated side by side in the same city, found it to their mutual advantage to merge into one. In this way this last and most prosperous department of the famous old University of Nashville, that fountainhead of much of the educational progress and of the best of educational ideals and tradition in the state, became at length an integral part of the great State University, and housed in its historic buildings the Medical Department of the University of Tennessee from the time of the merger until it found its new and permanent home in Memphis in 1911.

THE JEFFERSON MEDICAL ASSOCIATION

In 1854, three years after the medical school of the University of Nashville began its career, the Jefferson Medical Association of Dandridge, Tennessee, obtained a charter from the Legislature giving it the power to confer the degree of Doctor of Medicine upon applicants who could pass a satisfactory examination. In all, diplomas were granted to but four or five persons. This organization later functioned only as a medical society (34).

THE SHELBY MEDICAL COLLEGE

During that brilliant period of the fifties in Tennessee, the success of the educational enterprises of Nashville, especially of the Medical Department of the University of Nashville, seemed to justify the founding of another medical college in the Athens of the South. In 1857 Drs. John P. Ford, John H. Callender, and Thomas L. Madden established the Shelby Medical College (41) as the medical department of a proposed "Central University" of the Methodist Episcopal Church, South, a project which materialized as Vanderbilt University a number of years later. The buildings of the new institution were located on the site of the present United States Custom House in the Capitol City and adjoined the City Charity Hospital of that day.

The first session, held in the fall of 1857, commanded an attendance of 85. After three consecutive sessions, the third having an enrollment of 120, the college, in common with most of the other institutions of learning in the South, was obliged to close its doors with the coming of the Civil War. Its buildings served for hospital purposes and as barracks for soldiers and refugees throughout the war. With buildings abused and delapidated, other physical equipment a mere "mass of rubbish," and only a minority of the faculty surviving, the plight of the college was so deplorable that reorganization after the war was out of the question. Shelby Medical College was never reopened as such, but, strictly speaking, it was revived when the Medical Department of Vanderbilt University came into being(22).

THE SCHOOL OF MEDICINE OF VANDERBILT UNIVERSITY

As a result of the revival of the pre-war project which proposed a Central University under the auspices of Southern Methodism, Vanderbilt University was established, and, as Chancellor Kirkland has aptly said, "the dream of an institution, built and endowed out of collections from the whole South, found a substitute in an institution made possible by a great benefaction from the North, from which direction no one dared hope for either encouragement or assistance"(42). When its doors were thrown open to academic students in October, 1875, Vanderbilt was dedicated, as Commodore Vanderbilt himself wrote, "to strengthening the ties that should exist between all sections of our common country"(23). Prior to this formal opening, however, one department was already in operation. At the laying of the cornerstone of the main edifice in 1874, Dr. Charles F. Deems said: "We are laying today the cornerstone of an institution that proclaims eternal warfare on Science"(45). Yet just one week before this occasion, on April 21 1874, Vanderbilt had entered the scientific field by acquiring a medical department through the adoption of the medical school of the University of Nashville. In this way, without any expenditure whatsoever, Vanderbilt secured for its first department a medical school a quarter of a century old, famous in its day, and even then well and favorably known.

The Vanderbilt enrollment for the first fifteen years of dual operation averaged 250 and the total number of graduates for that period was 1,513. The first faculty list contained the names of Dr. Thomas Menees, who served as dean for many years, and Drs. Paul F. Eve, William T. Briggs, John H. Callender, Thomas L. Madden, James M. Safford, Thomas O. Summers, William L. Nichol, Van S. Lindsley, Thomas A. Atchison and Charles S. Briggs(24). For twenty-one years the Medical Department of Vanderbilt was conducted in connection with that of the University of Nashville, but the relationship was severed and the department completely reorganized in 1895. At that time the medical school became an integral part of the university and moved into a new building on the corner of Elm and Summer streets. Nashville now found herself the home of three separate white medical schools, those of Vanderbilt, the University of Nashville, and the University of Tennessee, and also of one for negroes, for the Meharry Medical College had long been operating successfully in that city.

In the epoch-making study of medical education in the United States and Canada, made by Mr. Abraham Flexner in 1909, which resulted in the closing of some schools and in the generous support of others, including Vanderbilt, by philanthropic boards, he reported the medical school of Vanderbilt as having 200 students, a teaching staff of 40, of whom 17 were professors and general teaching facilities and equipment sufficiently satisfactory to be superior to those of the other institutions in the state(46). In summing up his recommendations from the findings of his survey, Mr. Flexner unhesitatingly stated that the state of Tennessee at that time protected more low-grade medical schools than any other southern state and that the six white medical schools then in operation valued their separate survival beyond all other considerations. He felt that those who were dealing with medical education in the state were making the worst, rather than the best, of their limited possibilities, and, as he saw it, Vanderbilt was the only institution at all able at that juncture to deal effectively with the subject(47).

With the removal of the Medical Department of the University of Tennessee to Memphis in 1911 the local field, at least, was abandoned to Vanderbilt, but by 1912 Vanderbilt had reached the end of its resources and saw nothing in prospect save the closing of what, according to Chancellor Kirkland, had been a very satisfactory and creditable medical school. The next year, however, through the recommendation of Dr. Henry S. Pritchett, President of the Carnegie Foundation for the Advancement of Teaching, Mr. Carnegie made a gift of one million dollars to the School of Medicine. This was followed in 1919 by four million dollars from the General Education Board, and two years later, when a new plant was determined upon, by three million dollars for endowment, half from the General Education Board and half from the Carnegie Corporation. In all, the medical school has been the recipient of eight million dollars from these two sources (43).

In 1925 the erection of the magnificent medical group was completed at a cost of three million dollars, and the opening of the new plant was celebrated in connection with the Semi-Centennial in October of that year. Dr. Pritchett said at that time: "The medical school and hospital, just completed, represents the best modern experience in medical teaching and research. It offers opportunities to the medical student unexcelled in any university in America. This high plane of accomplishment in medical teaching cannot fail to react in a mo stimulating degree on all other fields of university teaching and research" (57).

In 1917 the status of the institution had been elevated from a "Medical Department" to a "School of Medicine," and when the new plant was occupied, a complete reorganization was effected. Today, as it faces a new era of enlarged opportunity, the School of Medicine of Vanderbilt University strives to attain four outstanding aims: the training of competent physicians steady progress in research, the building of an adequate school of nursing, and the creation, around the Department of Preventive Medicine, of a public health service that measures its labors by national needs and world problems (44). This department shares with the university the entire span of more than half a century of fruitful history, and at the present time stands as the most noteworthy example of the development and the excellent achievements of Vanderbilt in recent years.

THE MEMPHIS HOSPITAL MEDICAL COLLEGE

Just at the time when the medical school of Vanderbilt was in its infancy and four years had elapsed since the closing of the Memphis Medical College, Dr. William E Rogers succeeded in renewing interest in a medical school for Memphis. In 1876 plans were perfected for the Memphis Hospital Medical College. A stock company was formed, $12,000.00 was invested in the enterprise, and a three-story building was erected on Union Avenue opposite the old City Hospital. The yellow fever epidemics of 1878 and 1879 prevented the opening of the institution until 1880, but at that time a fair start was made. For the first five years there was an average attendance of 79 and an average graduating class of 27. (13) (10) (25).

During this early period serious differences arose among the faculty, resulting in two reorganizations. The first faculty contained the names of Drs. W. E. Rogers. D. D. Saunders, S. C. Maddox, F. L. Sim. B. G. Henning, W. J. Armstrong, Heber Jones, W. W. Hall, Julius Fahlen, A. G. Sinclair, and W. B. Rogers. The name of Dr. W. E. Rogers, who was most active in founding the institution, disappears from the faculty list after the first reorganization in 1884, and after the second reorganization the following year, only four of the original names remain, those of Drs. F. L Sim, B. G. Henning, A. G. Sinclair, and W. B. Rogers. The names of Drs. S. A. Rogers, A. M. West, T. J. Crofford, R. B. Maury, Alex Erskine, E. A. Neely, and E. E. Francis complete the list (58). Despite the many hindrances of its infancy, the school enjoyed remarkable growth and made steady progress. When Dr. William Krauss, a former student who is now internationally known as an authority on malaria, returned in 1893 to take charge of the newly established pathological, histological and bacteriological laboratory, he brought with him the first oil immersion microscope ever used in Memphis.

After twenty years of successful operation the institution had become the second largest medical school in the United States. In 1900 there were 750 students enrolled. This phenomenal growth made necessary the erection of a new building, which was completed in 1902 at a cost of $100,000.00. By 1911 the enrollment had dropped to 380, but the institution had sent out up to that time 2,625 graduates, many of them bringing great credit upon it (14).

In his famous survey, Mr. Flexner speaks very frankly and in no wise flatteringly of the state of medical education in Tennessee in 1909. At that time he found 442 students in attendance at the Memphis Hospital Medical College and there was a teaching staff of 35, of whom 12 were professors. The school was occupying its excellent though heavily mortgaged building, but the course of instruction was not graded and the teaching facilities were not at all adequate for the large student body. Laboratory and clinical facilities were absurdly inadequate for the huge classes; students "looked on" at the obstetrical cases; there were no systematic records. In fact, there was not even anything to indicate that effective use was made of such material as there was (48). Mr. Flexner's recommendation regarding this institution and the College of Physicians and Surgeons, also located in Memphis, was that the "showy but quite mercenary concerns at Memphis be liquidated." This was not done, but both institutions soon ceased to operate as separate entities by merging with the College of Medicine of the University of Tennessee. This step was taken in accordance with a suggestion of the Council of Education of the American Medical Association that affiliation with a university was essential to permanent progress (58). It was on January 10, 1913, that an agreement became effective whereby the faculty, buildings and equipment of the Memphis Hospital Medical College were acquired by the State University (60), and its "showy" building, now known as Rogers Hall, is at present the home of the College of Dentistry of the university.

THE COLLEGE OF MEDICINE OF THE UNIVERSITY OF TENNESSEE

The University of Tennessee has a long and fascinating history. During the period of the fifties, a most trying period of decline for East Tennessee University (61), as it was then called, three futile attempts were made to organize a medical department. In 1854, when this institution was already sixty years old, it was found impossible to secure a sufficient number of competent physicians for a faculty. Again early in 1858, and also in 1859, unsuccessful attempts were made to launch a medical school (37) (26). After this the matter remained in abeyance for the next twenty years.

In the summer of 1876, Drs. Duncan Eve and W. F. Glenn of Nashville organized the Nashville Medical College. The first session began in March, 1877, under most auspicious circumstances. The faculty list included such distinguished names as Paul F. Eve, T. B. Buchanan, and W. K. Bowling, and, for a first session, the number of students was greater than that of any medical college in the United States. The first class graduated in 1878 (38) (41).

The next year, 1879, overtures were made by the trustees of the University of Tennessee at Knoxville which resulted in an agreement whereby the Nashville Medical College was adopted as the Medical Department of the University of Tennessee (27). At that time the medical press prophesied that "among all the schools and colleges of this renowned university none will bring her richer treasures and growth in honor than her medical college" (62). For the first ten year period, 1879-89, the new Medical Department of the university had a student body averaging 171 and a graduating class averaging 61 annually. Nashville and Louisville were the leading medical centers of the Mid-South for many years and attracted students from a wide territory. It is, therefore, not surprising that the Medical Department of the University of Tennessee became one of the largest and most flourishing medical schools in the entire South. Entrance requirements were nominal, the course of instruction covered a period of only two years, as was the case elsewhere, and it was not uncommon to have a graduating class of over one hundred.

The enormity of medicine from the teaching standpoint had become so great by 1909 that the need of more money for equipment, more technical teachers in the laboratory, and a greater period of time in which to cover the course of study was glaringly apparent. To meet this situation an amalgamation with the University of Nashville was effected and the State University became heir to the splendid heritage of that pioneer institution (60). Mr. Flexner, in his sweeping report published in 1910, refers to the merged institutions as "the Universities of Nashville and Tennessee Medical Department," and reports a student body of 207, and a teaching staff of 55, of whom 26 were professors. He commends the clinical facilities available, but indicates that much might be desired as to laboratory facilities and general equipment (49). He strongly urged the University of Tennessee not only to abandon its efforts to develop its medical school at Nashville, but also to stay out of the field of medical education until some future time when there might be a real need for it to return, and when it might have adequate funds to do so.

It would be difficult to estimate the far-reaching effect of this survey on the six white medical schools then existing in the State of Tennessee. The very next year after its publication, the College of Medicine of the University of Tennessee was withdrawn from Nashville, leaving the local field to Vanderbilt. Not willing to abandon a medical department altogether, the Board of Trustees at first planned to offer a two-year course at Knoxville (62). Before this plan could be consummated negotiations were begun with the College of Physicians and Surgeons of Memphis with the result that the latter institution with its faculty, its buildings and equipment, became the College of Medicine of the State University (60). Such equipment as could be transferred from Nashville was added, and the 1911-12 session of the College of Medicine of the university was conducted in the Memphis plant.

A year later, in January, 1913, a merger with the Memphis Hospital Medical College, which had behind it a history of successful teaching extending over more than a third of a century, was successfully negotiated (60). Thus the university secured for its faculty a number of experienced teachers and men of national reputation, together with the buildings and equipment of this last of the four independent medical schools which had operated in Memphis. Finally, in June, 1914, the Medical Department of the Lincoln Memorial University, founded in 1889, was discontinued and its students transferred to Memphis (63), augmenting, for the third time since its removal to the western metropolis of the state, the College of Medicine of the University of Tennessee. So it comes about that today, as a monument to the efforts of those who, in the name of medical education, fostered the Nashville Medical College, the Medical Department of the University of Tennessee at Nashville, the Medical Department of the University of Nashville, the College of Physicians and Surgeons at Memphis, the Memphis Hospital Medical College, and the Medical Department of the Lincoln Memorial University, known as the Tennessee Medical College, at Knoxville, there has evolved one strong, firmly entrenched, worthy college of medicine, owned and operated by the state for the benefit and welfare of its people.

In 1925, the Legislature appropriated the necessary funds for the launching of an extension program and the Legislature of 1927 provided for its continuation (64). As a result, the present plan includes several handsome new buildings adequately equipped to enable the university to cope with its share of the problem of medical education in the state. It is most strategically located in close proximity to the Memphis General Hospital and to the Baptist Memorial Hospital, which provide clinical facilities not to be excelled in the state, and which, indeed, can be equaled by few medical schools in the country.

The university, as the agent of the state, has made splendid strides in overcoming the annual net loss of physicians within its borders. There are 460 fewer doctors in Tennessee today than there were thirteen years ago, despite an estimated population gain of 200,000. The university's survey of 1929 shows that the counties with highly industrialized urban centers all have a surplus of doctors, but a shortage appears in 54 counties in districts largely rural. Between 1919 and 1927 the loss of physicians averaged about 50 annually, but for 1928 and 1929 it decreased to an average of but 8 annually (66). The proportion of the state's new physicians coming from its university has been mounting steadily in recent years and it is not unreasonable to assume that in the near future the state will be training at least 75 per cent of its new physicians (65).

An innovation in medical teaching within the state is being introduced by the university with the current scholastic year (1929-30). The College of Medicine is now conducted on the four-quarter basis. The quarter system will keep the institution in constant operation, making possible the maximum use of the enlarged physical plant and of the instructors' time, and will enable students, by continuous attendance throughout each year, to graduate in three years instead of four. It will be possible under the new plan to graduate twenty more doctors each year, and the student who finds it necessary to drop out temporarily will often need to lose only one quarter instead of a whole year's work. Enabled through the wise legislation of recent years to enter upon an enlarged scale of operation, the College of Medicine of the University of Tennessee devotes itself assiduously today to the problem of medical education within the commonwealth which it serves, and enjoys a steadily increasing measure of success.

THE CHATTANOOGA MEDICAL COLLEGE

When Mr. Flexner made his memorable survey and found Tennessee harboring more low-grade medical schools than any other southern state, he was convinced that the six white medical schools then in operation, if treated on their merits, would speedily reduce to one. Two of these, the Chattanooga Medical College and the Tennessee Medical College, he described as "the utterly wretched establishments at Chattanooga and Knoxville" which should be "wiped out".

In 1889 a medical department was organized in connection with Grant University, later known as the University of Chattanooga. It was called the Chattanooga Medical College, and when Mr. Flexner visited it in 1909, he found a student body of 112 and a teaching staff of 25, of whom 11 were professors. Laboratory facilities were very meager. There were two tables in the dissecting-room; in the single room assigned to histology, pathology, and bacteriology, there were a few old specimens, mostly unlabeled, and one oil-immersion microscope. It was explained that students "study only non-pathogenic microbes; students do not handle the pathogenic." There were no books, charts, or models, and there was no museum. Amphitheater clinics were held at the Erlanger Hospital, which averaged about 50 free patients, but students were not admitted to the wards. About ten obstetrical cases were annually obtainable, for which students were "summoned"—just how was not clear. Mr. Flexner characterized this institution as a "typical example of the schools that claim to exist for the sake of the poor boy and the back country" (50). The very next year it ceased to exist (33).

THE TENNESSEE MEDICAL COLLEGE

Also in 1889, the Tennessee Medical College, the second of the "utterly wretched establishments," was organized at Knoxville. By purchase outright, in 1909, the institution became an integral part of the Lincoln Memorial University, which was in reality an industrial school at Cumberland Gap, and in no sense a university, a fact which helped to contribute to Mr. Flexner's impression of strange confusion in the medical field in Tennessee (51). On the occasion of his visit that same year, this intrepid investigator found an attendance of 82, and a teaching staff of 31, of whom 26 were professors. Laboratory and clinical facilities were exceedingly meager. There was a small laboratory for inorganic chemistry in the basement of the school building, and the laboratory for pathology, bacteriology, and histology consisted of a few microscopes, a microtome, and some sterilizing apparatus. There was no museum, nor were there any books, charts or models. Five clinics weekly in the private hospital next door, owned by the faculty, were scheduled, but admittedly were not always held. Instead, students were "called" when a case happened along which the doctor could arrange to have them see. Obstetrical instruction was limited "to a few deliveries before the class"(52).

It was not until 1914 that this institution finally abandoned the field of medical education. At that time its students were transferred to Memphis and it was merged with the College of Medicine of the University of Tennessee(63) (33). This marks the last withdrawal from the teaching field in medicine among the institutions for white students within the state.

THE SEWANEE MEDICAL COLLEGE

The University of the South at Sewanee for seventeen years maintained a medical school. It was opened in 1892 and was known as the Sewanee Medical College. A unique feature which attracted many students was the holding of its sessions from March through September. This experiment of summer classes and winter vacations proved very successful, and, with the exception of the last two years, was continued throughout the period of the school's existence. The enrollment for 1905 was 119, and up to that time degrees were granted to 528 students(67). The institution seems to have prospered for some years, but in 1909 it was discontinued(33).

THE COLLEGE OF PHYSICIANS AND SURGEONS

The last of the twelve white medical schools in the state, in the order of their founding, was the College of Physicians and Surgeons, the fourth independent medical school to make its home in Memphis. This institution was opened in 1906 and enjoyed a brief but successful career as a separate entity. It was well located in a new building opposite the City Hospital and included a School of Pharmacy and a College of Dentistry(15). The faculty consisted of men prominent in the local profession, including Drs. Heber Jones, M. Goltman, E. M. Holder, J. M. Maury, A. G. Jacobs, J. A. Chrisler, O. S. McCown, Richmond McKinney, W. C. Campbell, William Kraus, G. G. Buford, E. C. Ellett, Marcus Haase, R. S. Toombs, G. R. Livermore, Louis Leroy, W. H. Pistole, and P. W. Toombs. Dr. Heber Jones, long a leader in medical circles and particularly prominent in public health work, was the first dean. The school was one of the first in the South to advocate the graded system(58). It was prosperous from the beginning and received a liberal patronage.

In the report of his visit to the school in November, 1909, Mr. Flexner refers to it as "a stock company, now calling itself the Medical Department of the University of Memphis, a fictitious affair". He found there were no entrance requirements, for it was the policy of the administration to "accept students and try them out". There were 77 students in attendance and there was a teaching staff of 47, of whom 22 were professors. Fees were largely consumed in helping to pay for the excellent new building. In some departments laboratory work was conducted on antiquated lines and much needed equipment was lacking. In all, there were perhaps 40 beds accessible for clinical use at the City Hospital where seven one-hour clinics were held each week during one-half of the school year. Students "looked on" at the obstetrical cases(48).

This was the second of the two "showy but quite mercenary concerns at Memphis" which Mr. Flexner would have been glad to see liquidated. A committee from the Council of Education of the American Medical Association also inspected the institution and urged consolidation with some university(58). When the Medical School of the University of Tennessee was withdrawn from Nashville, the College of Physicians and Surgeons was adopted by that institution and became the Medical Department of the State University(60). The first session of the merged institutions was held in its plant in 1911.

NEGRO MEDICAL SCHOOLS

The acid test of the democratic gospel. in education as well as in other fields, comes, of course, in what is done for "the least". In the matter of medical education for negroes, especially in the South where millions of them come in close contact with many more million whites, self-interest seconds philanthropy, for they become of tremendous importance as a potential source of infection and contagion. In many particulars, negro doctors and nurses are best suited to serve their own race and to pioneer the way in instilling in their own people fundamental hygienic principles. Within the bounds of Tennessee there have been six attempts at negro medical education, but only one institution, the first to be founded, remains extant today.

THE MEHARRY MEDICAL COLLEGE

Prior to 1876 there was no medical school in the South for negroes, if the Medical Department of Howard University at Washington be excepted. In 1876 the Meharry Medical College was made possible by three Meharry brothers, and was organized as the Medical Department of Central Tennessee College(28), afterward known as Walden University. This relationship remained unchanged until 1916 when a new charter, independent of Walden University, was obtained. During the eighties the average enrollment was 40 and by the close of that period there had been 132 graduates altogether. At that time for the six and a quarter millions of negroes in the twelve southern states south of the Ohio and the Potomac, there were only 175 properly qualified negro physicians, and considerably more than half of these were graduates of Meharry. In 1886 a dental department was correlated with the medical department, and in 1889 a pharmaceutical department, for there was at the time even greater demand for negro dentists and pharmacists than for negro doctors.

When Mr. Flexner came along in 1909 on his tour of inspection, he found a student body of 275 and a faculty of 26, of whom 12 were professors. General equipment and conditions reflected great credit on the zeal and intelligence of the management(51). Of the seven medical schools for negroes in the United States at that time, three of them in Tennessee, Mr. Flexner declared all except Meharry at Nashville and Howard at Washington to be in no position to make any contribution of value to the problem of negro medical education, and rightly maintained that the upbuilding of these two would profit the nation far more than the inadequate maintenance of a larger number of schools. Today, twenty years later, the five other institutions which at some time attempted medical education for the negro in Tennessee are relegated to a very minor place in the pages of history. while Meharry prospers and carries on its splendid work. It stands as a monument to its real creator, Dr. George W. Hubbard (53), who served as dean and guiding spirit for many years. When the school became an independent institution in 1916, Dr. Hubbard became the first president. He retained this office until 1921, when he became president emeritus, and Dr. John J. Mullowney succeeded him as president. At the present time the school is organized along approved lines and is recognized as a class A college(68).

THE FIVE OTHER NEGRO MEDICAL SCHOOLS

The second attempt to foster negro medical education in the state was launched in Memphis, and proved to be short-lived. The Hannibal Medical College was opened in 1889, but there appear to have been no graduates at any time, and in 1896 the institution became extinct(33). The Medical Department of Knoxville College, "an excellent institution for the education of colored people," which for a time served as the colored department of the University of Tennessee(29), was organized in 1895, but it was discontinued in 1900(33). Chattanooga was the scene of the fourth undertaking. For nearly a decade that city had a medical school for negroes, known as the Chattanooga National Medical College. It was organized in 1899 and did not become extinct until 1908, but there is no record of any graduates except in 1901 and 1902 (33).

Following the discontinuance of the medical department of Knoxville College in 1900, an independent institution, the Knoxville Medical College, was established in Knoxville that same year. When Mr. Flexner visited this school nine years later, he found a student body of 23 and a faculty of 11, of whom 9 were professors. There were almost no resources and no laboratory or clinical facilities whatsoever. A student stated that twice within four months "a few students were taken to the Knoxville College Hospital". The catalog of the school proved to be "a tissue of misrepresentations from cover to cover"(54). The school occupied a floor above an undertaker's establishment, and this fact perhaps, together with Mr. Flexner's other findings, largely explains the death of the school the next year(33).

The sixth and last of the negro medical schools which Tennessee has sheltered was the University of West Tennessee College of Medicine and Surgery. It was organized at Jackson in 1900 and removed to Memphis in 1907. Mr. Flexner's visit in November, 1909, revealed an attendance of 40, a faculty of 14, all professors, very limited resources and still more limited equipment (55). The first class graduated in 1904, and there was a class each succeeding year including 1923. At that time the school was discontinued(33). It had graduated, in all, during its existence 216 negro doctors(59). With the closing of this school, all the Tennessee institutions which Mr. Flexner described as "ineffectual" and declared to be "wasting small sums annually and sending out undisciplined men whose lack of real training is covered up by the imposing M.D. degree"(56), have vanished from the scene of activity. Meharry, the oldest and best suited institution in the state for the dissemination of medical education among negroes, alone survives, profiting the state much more than the inadequate maintenance of a larger number of schools.

CONCLUSION

The evolution of medical education in Tennessee has indeed been a process of combination and elimination, offering an excellent example of the survival of the fittest. Through the force of public opinion and the influence of professional organizations the requirements for professional education have so changed through the years that long and arduous training has come to be demanded. This development has proceeded so rapidly, so extensively and so strikingly in the field of medicine as to challenge the attention of the whole world and to sound the death knell of a number of institutions. A new era of medical history is in the ascendancy in the United States today, an era of changes, rapid and deep, in the method and content of medical education. As this movement gathers momentum, Tennessee, with her eighteen institutions reduced to three, is far better able than ever before not only to keep abreast of the times in this important field, but also to pioneer the way to greater heights of achievement for herself and for the nation.

In this state the evolutionary process is typical of the general progressive steps throughout the United States. Many of the weaker institutions have been eliminated or have combined to make stronger institutions, and these in turn, if not already so operated, have come to be conducted as departments of universities. The School of Medicine of Vanderbilt University and the College of Medicine of the University of Tennessee offer outstanding examples of this progression. The record of the gradual elevation of standards in these two institutions portrays in large measure the successive steps in the development of medical education in Tennessee as it has evolved from a nebulous state to the present level. The day of the proprietary medical school which at first exacted no entrance requirements and offered a complete course in two sessions of only four months each, has passed. The four-year curriculum of today, based on two years of pre-medical work of college grade and amplified by laboratory and clinical facilities undreamed of in earlier years, presents a sharp and pleasing contract to the program of "lectures, quiz, and cram" in vogue not many years ago. The recent rapid spread of a scientific conception of medicine has left its impress upon the status of medical education within this state, as elsewhere, and no less important than the marked advances of recent years and the rapid rate of their multiplication is the trend which they typify.

The pleasure found in arraying the past against the present frequently excites unlimited expectations for the future. Imbedded deep in the code of Vanderbilt, of the State University, and of Meharry today are the worthy ideals for medical education set forth in the state nearly a century ago. With these go hand in hand the consciousness of widened areas of duty, the inspiration of vastly broadened opportunities for service, and the urge of the alluring summons of research, all crowned by a common loyalty to the scientific method and a ready response to the call of the true scientific spirit. Who dares to prophesy how fruitful a tomorrow may grow out of our promising today? May the words of the immortal Philip Lindsley yet echo in our midst: "We, the university, live forever, and generations yet unborn shall rejoice in our triumphs and pronounce the eulogium which our labors will have won"(30).

REFERENCES

(1) Flexner, Abraham: Medical Education, New York, The Macmillan Company, 1925, p. 41; (2) Ibid., p. 42.

(3) Flexner, Simon: Medical Education and Medical Research, Proceedings of the Semi-Centenial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926, pp. 149-50.

(4) Blackwell, R. E.: A Survey of Higher Education in the South During the Last Fifty Years, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926, p. 40.

(5) Johnston, George Ben: Medical Education in the South, The South in the Building of the Nation, Richmond, Virginia, The Southern Historical Publication Society, 1909. 10:395.

(6) Vincent, George E.: Scientific Medicine and the Public, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926, p. 172.

(7) Vedder, O. F.: Keating's History of the City of Memphis and Shelby County, Tennessee; Syracuse, New York; D. Mason and Company, 1888. 2:114; (8) Ibid. 2:115; (9) 2: 115-17; (10) 2:117.

(11) Young, J. P.: Standard History of Memphis, Tennessee, Knoxville, Tennessee; H. W. Crews and Company, 1912, p. 541; (12) Ibid. p. 542; (13) p. 549; (14) pp. 549-50; (15) p. 550.

(16) Merriam, L. S.: Higher Education in Tennessee, Washington, Government Printing Office, Bureau of Education, Circular of Information No. 5, Contributions to American Educational History No. 16, 1893, p. 195; (17) Ibid. p. 44; (18) p. 45; (19) p. 49; (20) pp. 45 and 49; (21) p. 52 gives text of agreement; (22) pp. 108-09; (23) p. 118; (24) p. 128; (25) p. 225; (26) p. 67; (27) pp. 81-83; (28) pp. 269-74; (29) p. 104; (30) p. 27.

(31) American Medical Directory. It reports this institution as "Organized 1854 as the Medical Department of Cumberland University; suspended 1861-68; reorganized 1868; extinct 1873". (32) Ibid. It says of this institution: "Eclectic Medical Institute, organized 1857 as the Botanico-Medical College; above title assumed 1859; extinct 1861". (33) Ibid. (34) Ibid. It reports this association as "organized 1854, granted four diplomas, extinct about 1875, and said to have been an examining board only".

(35) Commencement Address of 1837.

(36) Goodspeed: History of Tennessee, Nashville, Tennessee, The Goodspeed Publishing Company, 1887, p. 444; (37) Ibid. pp. 449-50; (38) p. 451.

(39) Clayton, W. W.: History of Davidson County, Tennessee; Philadelphia, J. W. Lewis Company, 1880, p. 291; (40) Ibid. p. 292; (41) p. 293.

(42) Kirkland, James H.: Vanderbilt University in Retrospect and in Prospect, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926, p. 56; (43) Ibid. p. 69; (44) p. 71.

(45) The Scientific Monthly, 1874.

(46) Flexner, Abraham: Medical Education in the United States and Canada, A Report to the Carnegie Foundation for the Advancement of Teaching, Bull. 4, D. B. Updike, The Merrymount Press, Boston, 1910, pp. 305-06; (47) Ibid. p. 308; (48) pp. 304-05; (49) p. 306; (50) pp. 302-03; (51) p. 307; (52) p. 303; (53) p. 182; (54) pp. 303-04; (55) p. 305; (56) pp. 180-81.

(57) Vanderbilt—Its Progress and Purposes; a descriptive booklet with pages unnumbered (1926).

(58) Francis, E. E.: The Progress of Medical Ed-

ucation in Memphis, Memphis Medical Journal, 3, No. 6, (June) 1926, p. 134; (59) Ibid. p. 135.

(60) Catalog of the College of Medicine, University of Tennessee, 1928, p. 14.

(61) Sanford, Edward T.: Blount College and the University of Tennessee, an historical address delivered before the Alumni Association and members of the University of Tennessee, June 12, 1894, Knoxville, Tennessee; The University of Tennessee, 1894, p. 63.

(62) Haggard, William D.: The Early History of the Medical Department of the University of Tennessee, an address made at the dedication exercises of the Anatomy Building of the College of Medicine of the University of Tennessee, (Dec. 15, 1926). Unpublished.

(63) Historical Sketch, University of Tennessee, Bull. 19, No. 4, (April) 1928.

(64) Biennial Report of the Board of Trustees of the University of Tennessee, 31, No. 6, 1928, p. 39; (65) Ibid. p. 40.

(66) Annual report of Dr. O. W. Hyman, chief executive officer of the College of Medicine of the University of Tennessee.

(67) The University of the South, Bull. 1, No. 3, (November) 1906; Bull. 3, No. 3, (November) 1908.

(68) These facts were furnished by the Registrar of the Meharry Medical College in February, 1930.

BIBLIOGRAPHY

American Medical Directory.

Blackwell, R. E.: A Survey of Higher Education in the South During the Last Fifty Years, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926.

Clayton, W. W.: History of Davidson County, Tennessee; Philadelphia, J. W. Lewis Company, 1880.

Flexner, Abraham: Medical Education, New York, The Macmillan Company, 1925; Medical Education in the United States and Canada, A Report to the Carnegie Foundation for the Advancement of Teaching, Bull. 4, D. B. Updike, The Merrymount Press, Boston, 1910.

Flexner, Simon: Medical Education and Medical Research, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926.

Francis, E. E.: The Progress of Medical Education in Memphis, Memphis Medical Journal, 3, No. 6, (June) 1926.

Goodspeed: History of Tennessee, Nashville, Tennessee. The Goodspeed Publishing Company, 1887.

Haggard, William D.: The Early History of the Medical Department of the University of Tennessee. Unpublished, 1926.

Johnston, George Ben: Medical Education in the South, The South in the Building of the Nation; Richmond, Virginia; The Southern Historical Publication Society, 10, 1909.

Kirkland, James H.: Vanderbilt University in Retrospect and in Prospect, Proceedings of the Semi-Centennial of Vanderbilt University, Bull. 26, No. 3, Vanderbilt University, (April) 1926.

Merriam, L. S.: Higher Education in Tennessee, Washington, Government Printing Office, Bureau of Education, Circular of Information No. 5, Contributions to American Educational History No. 16, 1893.

Sanford, Edward T.: Blount College and the University of Tennessee; Knoxville, Tennessee, The University of Tennessee, 1894.

Scientific Monthly: 1874.

University of the South: Bull. 1, No. 3, (November) 1906; Bull. 3, No. 3, (November) 1908.

University of Tennessee: Biennial Report of the Board of Trustees, 31, No. 6, 1928; Bull. 19, No. 4, (April) 1928; Catalog of the College of Medicine, 1928.

Vanderbilt—Its Progress and Purposes, Vanderbilt University, 1926.

Vedder, O. F.: Keating's History of the City of Memphis and Shelby County, Tennessee; Syracuse, New York, D. Mason and Company, 2, 1888.

Vincent, George E.: Scientific Medicine and the Public, Proceedings of the Semi-Centennial of Vanderbilt University, (April) 1926.

Young, J. P.: Standard History of Memphis, Tennessee; Knoxville, Tennessee; H. W. Crews and Company, 1912.

DR. H. L. FANCHER (Chattanooga): Mr. Chairman and Fellow Members of the Tennessee State Medical Association:

After reviewing this wonderful history of medical education in Tennessee written by Dr. Warr of Memphis, I found that there was nothing which I could discuss intelligently for this reason: I have always adopted a method of finding fault or differing in some way with the essayist or finding some way in which I could add something which would be intelligent to the essay as written. In the case of Dr. Warr's paper I find that I cannot differ with him and I cannot add to what he has said. I simply want to congratulate Dr. Warr on the tremendous amount of work that he has evidently put on this paper, and say further that so far as the literary completeness is concerned, it is one of the best that I ever read. I think he compares well with Wells and Ridpath and other great historians. I am so sorry that Dr. Warr is indisposed and not able to be present to read his own paper. I wish to commend the paper and tell you that it is published in the bound volume of history and at your leisure I hope each and every one of you will take time to read what has been going on in medical education evolution.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1930

EDITORIAL

DRUG STORES

Two statements have been received almost simultaneously which portray a situation that is absurd.

The first statement is from a man who says he had to drive twenty-three miles to get some castor oil and tincture of iodine because the local merchant near him is no longer permitted to carry these drugs in stock.

The second statement was that a patient took the prescription of a physician to a drug store to be filled and the patient was advised by a clerk in the drug store that a certain patent medicine would be far more efficacious than the medicine prescribed by the physician.

The pharmacists of the state did sponsor a law which the Legislature passed and which had the effect of prohibiting general merchants from carrying in stock certain drugs. The druggists urged that the passage of the bill would protect the public against the danger of poison from the use of drugs of which neither an ordinary merchant nor purchaser know anything.

The druggists have succeeded in bringing into their stores all the purchasers of drugs and when the patron reaches the store he is advised by the expert druggist or the expert clerk in the drug store as to the medicine that is needed. The druggist presumes to know all about drugs and about diseases.

We venture the assertion that counter prescribing by druggists today is many thousand times as harmful as the sale of household remedies by country merchants has ever been.

One can walk into a store that is labeled "Drug Store" and it is difficult for one to tell whether he is in a restaurant, a candy store, a patent medicine vender's hole in the wall or what-not. The apothecary department many times is in a small corner in the back.

In our attempt to correct small evils by law it seems we create still greater evils. This certainly is an instance.

The educated qualified pharmacist today in many instances is but the hired help of a chain drug store. This does not add anything to the dignity of the profession of pharmacist.

Druggists have developed the slogan: "Your druggist is more than a merchant." He certainly is. He is a patent medicine vender. He is a counter prescriber. He prescribes drugs of which he knows little for diseases of which he knows nothing. He is a restaurant keeper. He is a soft drink vendor. He is a tobacco salesman, and many other things besides.

I wonder if we couldn't do something to bring back the old apothecary. I wonder if we couldn't get the doctors to patronize a real apothecary?

We know of two owners of drug stores in Nashville who have ordered their clerks never to prescribe.

What is the reaction of the profession to this situation?

MEDICAL ECONOMICS

The question of medical economics is still up. No one has yet found a solution. The committee that was created and financed to investigate into the cost of medical care is revising its own plans from time to time and may eventually get around to the fundamental facts. We hope so.

The House of Delegates of the American Medical Association at the Detroit session passed a resolution directing the Board of Trustees to create a Bureau of Medical Economics. This bureau deserves the support of the profession. It is sincerely hoped that the doctors in Tennessee when called upon for information will respond with dispatch.

There are many cross currents of opinion both within and without the medical profession. There is great need for accurate information which must guide us to a solution.

We are still for the old ethical standards which by the test of time have proven their worth. They may add to the cost of medical care to a slight degree, but this is offset many times over by its benefits. A democracy may be less efficient and more expensive than a monarchal form of government, but we are for this also in spite of its added costs.

"READING MAKETH A FULL MAN"

If the above statement is true, one might conclude that a man will be full of the kind of stuff he reads. A little investigation of what the people of Tennessee are reading along medical lines might be interesting.

Most of the material for the news section of this Journal is obtained from a press clipping service. All the papers in Tennessee are supposed to be read by this agency and every item mentioning doctors, medicine and hospitals is sent to us. Some additional news items are supplied by county secretaries, but the greater part of what you read in the news section of the Journal is based on clippings.

This month we have analyzed these clippings and find them subject to being classified under several heads.

1. *Out of State News.* A report of the death of Dr. Harvey Wiley and a picture of Dr. E. Starr Judd, President-Elect of the American Medical Association, are typical of the news classified under this head. A total of 10 clippings were received this month.

2. *Deaths.* Seven doctors died during the period covered by our clippings. One of these deaths was reported in six different clippings. Other deaths in a fewer number of papers. A total of 19 clippings come under the head of deaths.

3. *Medical Societies.* Ten meetings of county societies were announced and recorded by the state press. One meeting secured six notices, others a fewer number. A total of 18 clippings was received.

4. *Personal.* The three thousand doctors in Tennessee received some publicity of a personal nature during the month. Such items were as follows: the plans of one doctor to buy an airplane, two other doctors' addresses before luncheon clubs, the third doctor won a suit against an insurance company, several doctors moved their offices, the picture of a physician's bride, hospital internes. The clippings classified under this head numbered a total of 33.

5. *Public Health.* Clinics, units, reports, conferences, visits of distinguished doctors, talks and death rates were reported in 93 clippings.

6. *Miscellaneous.* "Medical Students in Military Camps," "Tuberculosis in Shelby County Cows," "The Country Doctor," "New Medical Buildings," medical auxiliary notes, and such items were classified under this head and were reported in a total of 19 clippings.

SUMMARY

If "reading maketh a full man," the people of this state were filled along medical lines last month in the following proportion:

Class	*Clippings*	*Percentage*
1. Out of State News	10	5.21
2. Deaths	19	9.89
3. Medical Societies	18	9.37
4. Personal Mention	33	17.19
5. Public Health	93	48.43
6. Miscellaneous	19	9.89
Total	192	99.98

DEATHS

Guy Russell Jones, Orlinda; University of Louisville (Ky.) School of Medicine, 1905; past president of the Robertson County Medical Society; past president of the school board; aged 47; died, July 2, in the Barr Infirmary, Nashville, of heart disease.

Samuel I. Yarnell, Chattanooga; Vanderbilt University Medical School, 1887; aged 79; died, June 25, after a lingering illness.

To the Members of the Tennessee State Medical Association:

Would you be interested in having in your library a nicely bound book containing the papers and special addresses delivered before the general session of the Centennial Meeting of the State Society, together with the texts of the two night features—namely, the memorial exercises designated "A Return of the Immortals of Tennessee Medicine" and the historic pageant designated "A Return of the Immortals in Medicine?"

If you are interested, please sign and return the form below.

The idea is this: To assemble all this material into a nicely bound volume after it has appeared in the JOURNAL. It would contain:

First. Twenty-six addresses and papers, as follows:

"Poliomyelitis," by Dr. Oliver Hill, Knoxville.

"The History of Eclamptic Therapy, with Analyses of One Hundred and Fifty Cases in the Memphis General Hospital," by Dr. J. R. Reinberger, Memphis.

"The History of Eczema for One Hundred Years," by Dr. William Allen Pusey, Chicago.

"The History and Development of the Operation of Enucleation of the Eye," by Dr. E. C. Ellett, Memphis.

"The Evolution of the Code of Medical Ethics and Its Influence Today," by Dr. Morris Fishbein, Chicago.

"The Surgery of Uterine and Ovarian Tumors, A Retrospect," by Dr. C. Jeff Miller, New Orleans.

"The Most Outstanding Achievement of Preventive Medicine in One Hundred Years," by Dr. Hugh Cumming, Surgeon-General, U. S. P. H. S., Washington, D. C.

"Presidential Address," by Dr. L. T. Stem, President, Chattanooga.

"One Hundred Years of the Tennessee State Medical Association," by Philip M. Hamer, A.B., M.A., Ph.D., Professor of History in the University of Tennessee, author of the "History of the Tennessee State Medical Association," Knoxville, Tenn.

"History of Medical Education in Tennessee," by Dr. O. S. Warr, Memphis.

"Economic Status of Medicine Today," by Dr. M. L. Harris, President, American Medical Association, Chicago.

"The Evolution of Abdominal Surgery," by Dr. John B. Deaver, Philadelphia.

"The Most Outstanding Accomplishments in the Field of Obstetrics in the Last Hundred Years," by Dr. J. O. Polak, Brooklyn, N. Y.

"The Heart in Acute Infectious Diseases," by Dr. W. H. Witt, Nashville.

"Arterial Hypertension and Its Management," by Dr. J. S. McLester, Birmingham, Ala.

"Puzzling Types of Gastro-Intestinal Disease," by Dr. W. C. Alvarez, Rochester, Minn.

"Intravenous Administration of Glucose in Ringer's Solution," by Dr. John Shelton Horsley, Richmond, Va.

"Progress in the Treatment of Diabetes Mellitus," by Dr. C. E. Homan, Chattanooga.

"Medical Organization, Its Development and Purpose," by Dr. Olin West, Chicago.

"Advances in Our Knowledge of Gastro-Intestinal Diseases," by Dr. Joseph H. Larimore, St. Louis, Mo.

"The Evolution of Pediatrics," by Dr. I. A. Abt, Chicago, Ill.

"The Evolution of Urology," by Dr. C. F. Anderson, Nashville.

"The Causes of Non-Union Following Fracture of Bones," by Dr. Dunbar Newell, Chattanooga.

"Chloroma, with Report of a Case," by Dr. Ralph Monger, Knoxville.

"The Rationale of Hysterectomy Following Cæsarean Section in Cases of Intra-Uterine Infection," by Dr. Jere Crook, Jackson.

"Retrobulbar Neuritis," by Dr. W. H. Wilmer, Baltimore, Md.

Second. A complete statement of the memorial exercises. This would include a photograph and a historic sketch of one hundred and three outstanding figures in Tennessee medicine during the century.

Third. A statement of the historic pageant. This will include a statement of the staging, together with the historic statements uttered by each of the twelve characters represented, and a group photograph of the characters in costume.

This material will make a volume of about three hundred pages, journal size.

If enough of you are interested, the plans will go forward and the volume will be prepared.

If a sufficient number are not interested, the plans will not go forward.

We are encouraged by the responses so far received, but more must sign before the order for printing will be given.

H. H. SHOULDERS,
Secretary-Editor.

- -

Please send me__________________copies of the addresses delivered at the Centennial Meeting. I will pay the postman $3.00 per copy.

____

____

____

NEWS NOTES AND COMMENTS

The East Tennessee Medical Society will meet at Cleveland October 16-17. A good program is being prepared.

Dr. A. B. Stone, of Nashville, has opened offices in Knoxville.

Dr. T. H. Greene, of Miami, Florida, has located in Knoxville.

The new Medical Arts Building in Knoxville was opened July 24th. There are about fifty doctors and dentists at present in the building.

Dr. W. H. Ennis has been appointed as head of the health department of the city of Knoxville.

Dr. George Baker, who has been doing special work in New York for the past two years, has opened offices in the Medical Arts Building; practice limited to pediatrics.

Dr. R. L. Murph, of Yorkville, has moved to Milan, where he has opened his office.

Dr. E. S. Hopper, of Alamo, was elected president of the Dyer, Lake, Crockett Society.

MEDICAL SOCIETIES

Bedford County—"Incipient Pulmonary Tuberculosis" was the subject discussed by Dr. J. K. Freeman at the July meeting.

Carroll, Weakley, Henry, Benton Counties—Dr. J. H. Williams and Dr. R. G. Fish gave the program at the July meeting. A good attendance was present.

Gibson County—Drs. W. C. Chaney, Memphis; E. H. Baird, Dyersburg, and F. Douglass, of Dyer, supplied the July program. Their papers were instructive and well discussed.

Greene County—The Greene County Medical Society met at Greeneville on July 23. After lunch, Dr. Horton Casparis, Nashville, addressed the meeting.

Hamilton County—July programs were given as follows:

July 17th: Symposium on Public Health Activities, Drs. J. C. Eldridge, Cleo C. Parcell, and Jas. L. Hamilton.

July 24th: "Extra Systoles," by Dr. C. E. Homan.

July 31st: "Choice of Anesthetics," by Dr. J. A. Moffitt.

August 7th: "Sinus X-Rays," by Dr. E. M. DeLay.

Knox County—July 15th: Claude Wood, D.D.S., "Preventive Orthodontia."

July 22nd: M. S. Roberts, M.D., "Treatment of Complicated Appendicitis."

July 29th: R. G. Ashley, M.D., "Deviated Septum."

Loudon, Monroe, McMinn Counties—These counties held a joint meeting at Sweetwater, July 24th. Papers were read by Drs. W. S. Moore, W. D. Padget and C. L. Chumley. A good attendance was present. The next meeting will be held at Athens on August 21st.

Madison County—The meeting on July 1st took place at the Y. M. C. A. A business session was held and a round table discussion of chronic conditions was participated in by all.

The second meeting in July was the annual barbecue at Felsenthal Springs. All the known picnic games were indulged in and enjoyed.

Overton, Putnam, White, Warren Counties—A meeting was held at the Webb Hotel, Rock Island, on July 24th. Papers on "Colitis" and "Chronic Arthritis" were read.

Robertson County—The Society was entertained by Dr. J. W. Thomas at his home in Cross Plains. Dr. J. P. Keller, Nashville, was the essayist, his subject being "Hypotension."

At the close of the program a short memorial service was held for the late Dr. Guy R. Jones.

BOOK REVIEWS

Clinical Nutrition and Feeding in Infancy and Childhood, by I. Newton Kugelmass, M.D., Ph.D., Sc.D., Associate Attending Pediatrician, Fifth Avenue Hospital; Riverside Hospital; Pediatrist, Hospital for Ruptured and Crippled; Director, Heckscher Institute for Child Health. Cloth, pp. 345, with 37 illustrations. Philadelphia and London: J. B. Lippincott Company, 1930. Price $6.00.

The author has written a book intended primarily for the general practitioner. The usual topics found in such a work are included, the subject matter being divided into ten chapters. Each chapter has an introductory sentence for every paragraph, which sentence gives the gist of that paragraph, thus facilitating the quick location of the desired information.

In the chapter devoted to preventive pediatrics there is given among other items a section on "Prenatal Nutrition," a subject that is too often neglected. The early addition of food in infancy is suggested as follows: At 1 month: Orange juice, tomato juice, vegetable water, prune juice. At 2 months: Jello, banana, egg yolk (grated). At 3 months: Cereal, vegetable puree. At 4 months: Cooked vegetable, stewed fruit.

Numerous illustrations add to the book. An outstanding feature is the wealth of graphic charts and tables. Hardly a page in the work is without a food table or chart. Tables showing the various elements in foods, caloric values, 100 calorie portions of foods, etc., make this a valuable reference work for one who is not constantly dealing scientifically with the technic of nutrition. Diet lists appropriate to those diseases in which food is an important part of the treatment are given.

The short discussions in the subject matter give the essential facts, and this with the many charts and diet lists add to the value of this book as a reference work. —J. M. L.

Diseases of the Eye, by Charles H. May, M.D. Thirteenth Edition, Revised, with 374 Original Illustrations, including 23 plates with 73 colored figures. New York. William Wood & Co., 1930. Price $5.00.

This book has again been carefully revised, some chapters having been re-written, many alterations, a few illustrations, and some additions have been incorporated in the text. A part of one of the chapters has been devoted to the slit-lamp and corneal microscope. In bringing this volume up to date it has not been increased much in size, the original plan of presenting a book for the student and general practitioner having been adhered to. This is a standard text book as used in most of the medical schools of the world. It has been translated into eight foreign languages.

—R. J. W.

MINOR SURGERY. Hertzler and Chesky. Second Edition. C. V. Mosby Company, Publishers. Price $10.00.

An excellent compact book on the subject of minor surgery. The text is amply illustrated, which makes it especially valuable for the busy student and hard working practitioner who has all too little time often to devote to the reading he would wish to do. The illustrations are clear and numerous. The subject matter is splendid throughout, and while conclusive, is concisely brief. A very pleasing and interesting part of the book is the thorough way in which industrial injuries are taken up. This fact makes the book especially valuable to any medical man doing industrial work. In short, this is a book well worthy of purchase by any student or surgeon on the subject of Minor Surgery.

DR. JOHN L. DIES, Memphis.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. J. J. R. Macleod, M.B., LL.D., D.Sc., F.R.S., Aberdeen, Scotland. Published by C. V. Mosby Company, St. Louis, Mo. Price $11.00.

Macleod's works in the general field of physiology and biochemistry need no introduction. Since the appearance of his first edition, some twelve years ago, all future contributions have been favorably received not only by the specialist but by the profession in general.

His latest edition (sixth) brings the subject up to the present day thought. Certain changes have been made in this text which serve to exclude many well recognized but apparently unnecessary facts indispensable in the older editions.

There seems to be a very satisfactory revision of the index. Other features which are dealt with in a most enlightening and scientific manner are sections especially on Hyrogen Iron concentration, Blood and Lymph, Circulation of Blood and Metabolism. There has not been made any radical change in these subjects, but they remain a delight to anyone interested in this field to peruse them. Some new ideas have been included. The section treating upon the subjects of Neuromuscular System and Special Senses particularly must be heartily welcomed by the physiologist. In general it might be said that this edition deals with stricter and surer physiological aspects than can be found in the previous texts; but at the same time elaboration of the biochemical phases tends to bring the entire interrelated subjects into a well rounded presentation.

There is little doubt if any work on this subject can be found in the English language which will serve the biochemist with as much genuine satisfaction. This is made possible by the clear, concise and authoritative language which characterizes the text. This edition only serves to further the impression that the author continues to have the subject well in hand and at the same time thoroughly capable of imparting this information to his readers. J. H. L.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Perineal Anesthesia in Obstetrics. Torleif Torland, M.D., F.A.C.S., Seattle, Wash. Northwest Medicine. July 1930.

For eight or ten years the author has been using perineal block as a routine in practically all primiparae and in many multiparae. It is necessary to know the anatomy of the perineum. It is used to produce analgesia and relaxation during the perineal stage of labor, when the head is on the perineum which is the most painful part of labor.

The first stage pain can be controlled by twilight sleep or the Gwathney method, etc. The injection is simple. One half and one per cent novocain is used. Colles fascia is the most sensitive part of the perineum. Under this fascia on both sides of the vagina, extending from the rectum and almost up to the symphysis pubis, is a long narrow space called the ischiorectal fossa. This fossa is divided into an anterior and posterior triangle—containing the principal nerve supply to the perineum.

Most frequently injection of the anterior triangle is sufficient, but in an exceptionally tight, narrow vaginal outlet, it is necessary also to inject the posterior triangle. By this method the agonizing shrieks of the bearing down pains disappear as by magic. The perineal muscles relax, the vaginal outlet gaps widely and the presenting part passes through the paralyzed opening, very frequently without any laceration whatever. If there is a laceration, it can be repaired immediately absolutely without pain.

Perineal anesthesia has no remote results, no influence on uterine contractions and no higher incidence of necrosis, infection or difference in wound healing. It can be used in the home as well as in the hospital and it is worth further investigation and more extended use.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

The Use of Solution of Pituitary in Herpes Zoster, by D. M. Sidlick, M.D., Philadelphia, Archives of Dermatology and Syphilology, July, 1930.

The author describes his treatment and quotes the results of fifty-four patients treated by this method. It was given intramuscularly in dosage varying from .5 to 1 c.c. It was usually given a day apart and the number of injections varied from one to six. The pain was relieved the first or second day. The herpetic lesions were healed in about a week. Pregnancy is the only contraindication to the treatment. It was found to be safe in cases of hypertension and advanced ages.

Note: I have used pituitrin on a number of cases with very satisfactory results over the past several years. I had not read the article by Vandel in 1923, but a colleague of mine who was practising in a rural community, by mistake, used pituitrin when he intended to use adrenalin. The pain was promptly relieved. He decided to give it further trial and also gave me the benefit of his experience.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

First Anatomic Observations in Hereditary Atrophy of the Optic Nerve (Leber's Disease). K. Rehsteiner, Archives of Ophthalmology, June 1930.

Rehsteiner asserts that hereditary atrophy of the optic nerve was first described by Leber in 1871 and is, therefore, sometimes designated as Leber's Disease. The disturbance is hereditary, but the persons affected with it usually have normal eyes and vision in early life. In the second or the third decade, visual disturbances develop which are progressive for some time and then remain stationary. Leber discovered the hereditary character of the disease. It was also noted that it occurred more frequently in men than in women. In one family, the sisters of the men who were affected transmitted the disease to their offspring, whereas they themselves did not contract it. The author reports the result of the anatomic examination of a patient who was affected with hereditary atrophy of the optic nerve. Up to the age of 39, the patient had had normal vision. Then visual disturbances developed suddenly, and examination revealed a scotoma, which in the course of the following months gradually affected a larger area. The two eyes were affected in almost the same manner. However, the periphery of the visual field was unimpaired. The patient died several years later of encephalorrhagia. Microscopic examination of the optic nerve revealed a primary atrophy of the nervous elements and a proliferation of the neuroglia. The arrangement of the connective tissue likewise showed marked changes. The pathologic conditions in the bulbus oculi were less severe than those in the optic nerve, but an atrophy of the ganglion cells was noted in the central part of the retina. The location of the atrophic parts in the retina and in the optic nerve indicated that the atrophy affected mainly the papillomacular bundle.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

Pregnancy and Tuberculosis, by H. L. Barnes, M.D., and Lena Barnes, Wallum Lake, R. I. American Journal Gyn. & Obst. April 1930.

The authors collected 535 cases of tuberculosis with pregnancy from sanatoriums listed with the National Tuberculosis Association, Lying-In hospitals and leading obstetricians, in an effort to determine whether pregnancy was beneficial or harmful in tuberculosis, or whether interruption of pregnancy was warranted. The majority of the cases comprising this study was made from sanatoriums for tuberculosis in that insufficient data in the rest would not warrant conclusions.

Comparison was made in 385 tuberculous patients who did not have therapeutic abortion, against a series of non-pregnant patients in various sanatoriums. It was found that pregnancy prevented improvement in 14% of minimal cases; 10% in moderately advanced cases, and 16% in far advanced cases. Thereby showing that pregnancy is an unfavorable factor in a small minority of cases, but taking into consideration that not all of these cases did not get sanatorium treatment, or none at all, it would seem that the results compare favorably with those of non-pregnant patients. This compares favorably with the resnlts of Professor Forsner of Stockholm, of Norris and Landis, and Miss Alice M. Hill.

Sputum studies reveal that there was a mortality of 6.2% in the negative ones, against 29.7% in the positive ones, which is a general experience in the non-pregnant state. The study of cavity formation could not decide anything definite. Extension of tuberculous processes by x-ray follow-up revealed that fifteen out of the twenty-six full term cases that there was evidence of improvement.

Subsequent histories of these patients at various periods after confinement from two to nine years in 230 cases showed that 48% of all full-term, 40% of spontaneous abortions, and 33% of the therapeutic abortions, and 8% who had premature labors were living. Of 358 pregnancies studied there were eight who died undelivered and three died in labor, all in whom were advanced cases, but the same is true in all patients in this stage. Of the 344 children studied, 82% were normal at birth and 6% were still-born. This tending to show that tuberculosis did not materially affect the child as is the general belief.

Moreover, it was shown that little support can be given to emptying the gravid uterus in the minimal cases, or in far advanced cases, in that most of the minimal cases do not need interference, and that far advanced cases are hopeless even with this procedure, but therapeutic abortion may be a remedy in a small number of cases, febrile with only a limited spreading of the lesions to x-ray, and still curable if the reactivations or recent extensions could be checked; however, this remains to be proven.

The questionnaire did not ask for data as to the influence of pregnancy in causing the development of tuberculosis, nor did it ask for cases of pregnancy in late tuberculosis, or in arrested cases after their discharge from the sanatorium, but records of their own cases at the State Sanatorium for the past 23 years reveal 56 patients whose sputum was positive, and who had children during or since sanatorium residence with 31% of them living, while of all tuberculous ex-patients, only 26 were living, and of the 53 negative sputum cases who have had children, 40 or 70% are living.

Their belief in general is that pregnancy should be avoided in a woman with active tuberculosis in order that she may be spared the extra work and worry of the baby, and that the baby be spared the risk of infection. That from the study of 410 pregnant tuberculous women, that pregnancy in itself is harmful only in a small percentage of cases, and that abortion is unnecessary in most favorable and futile in the most unfavorable cases, and that further study will be necessary to prove that therapeutic abortion will or will not benefit a small number of cases described above.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Acuff Building, Knoxville

Stenosing Tendo-Vaginitis at the Radial Styloid Process, by Harry Finkelstein, Journal of Bone and Joint Surgery, July 1930.

In 1895 Dequevain described a previously unrecognized condition affecting the tendon sheath of the abductor longus and extensor brevis pollices tendons, which occupies the first compartment on the dorsal surface of the radius near the styloid process. Numerous reports followed in Europe and America. The conditions appeared to be of traumatic origin, and occurs often in certain occupations, such as typewriters, piano players, adding machine operators, clothes washers, etc. There is a thickening of the tendon sheath over the styloid process, and is produced by increased friction of the tendons of the two muscles over the long groove at the distal radial end.

The pathology found at operation is thickening of the tendon sheath, which constricts the underlying tendons, interfering with their normal gliding motion. While there is much thickening of the surrounding structures, the tendons themselves show little change. At times they are slightly contracted and the portion beyond the constriction may be slightly bulbous. We cannot enter into the microscopic findings, macroscopic findings, animal experiments, etc., described in this article.

The symptoms given are pain at tip of styloid process, radiating down thumb and up forearm, aggravated by movements of the thumb and the wrist. "Abduction of the thumb and ulnar abduction of the wrist are the most painful movements."

Spoons, knives and forks are grasped with difficulty. The pain is unrelieved by physiotherapy. Objectively there may be slight swelling obliterating the anatomical snuff box.

There is tenderness to pressure on styloid process. "On grasping the patient's thumb and quickly abducting the hand ulnarward the pain over the styloid tip is excruciating. This is perhaps the most pathognomonic objective sign."

In acute cases conservative treatment is sometimes effective—it consists in complete immobilization in a cast or otherwise. If this is ineffective, then operation treatment is indicated. This consists in exposing the area, using a local anesthetic, splitting the sheath or completely removing a part or all of the same. This practically always gives immediate relief.

Twenty-four cases are reported in series.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Use of Phenobarbital in Infant Feeding. E. J. Barnett, M.D., Archives of Pediatrics. July 1930.

The author reports the control of projectile vomiting in pyloric stenosis and pylorospasm by combining phenobarbital with the ordinary thick cereal feeding used in this condition. Surprising relief from pain in severe colic was observed also by the use of this drug. The action of the drug in controlling the vomiting is explained by its lowering the excitability and conductivity of the brain centers. This suggests that the vomiting of this condition is not purely mechanical, but it is due to excitability of the "vomiting center" in the brain becoming more sensitive from gastric irritation of the sympathetic nerve findings. Phenobarbital apparently inhibits the afferent emetic impulse along the vagus to the "vomiting center" much as atropine does, but more effectively.

Case reports of ten patients treated with phenobarbital for pylorospasm and pyloric stenosis are presented, 80% of which were relieved. Two cases of severe colic relieved are reported. The patients were from three weeks to three months of age. From one-eighth to one-fourth grain of phenobarbital was given in thick cereal feeding at the regular feeding interval. With improvement the drug was given every other feeding only, then twice a day, and finally withdrawn. One drop of a fresh 1:1000 solution of atropine was given with each dose of phenobarbital, but the author feels that the atropine was of little value given this way. There were no cases of atropine fever in the cases so treated, and no evidence of cumulative effect or idiosyncrasy to phenobarbital.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.
Doctors Building, Nashville

When Has Visceroptosis Clinical Significance? D. S. Beilin, M.D., in Radiology for August, 1930.

This discourse is based on a roentgenologic study of gastro-intestinal cases—20% have pathologic visceroptosis. This condition has existed for years. Glenard published a paper on this subject in 1833. The term means the dropping of an organ.

An accurate study of this condition was impossible until the advent of radiography. The degree of prolapse sufficient to produce pathology is unsettled. Only gastroptosis and coloptosis will be considered.

Anatomic and clinical visceroptosis differ very greatly. In anatomic visceroptosis there is no interference with physiologic function. In clinical visceroptosis there is a perversion of physiologic function which causes symptoms. A diagnosis can only be made after the exclusion of organic pathology.

Gastroptosis is the result of relaxation of the attachments. Clinical gastroptosis often follows emaciation and muscular relaxation. It is almost always acquired. It occurs about four times as often in women as in men. The age incidence is 20 to 70 years; 80% is seen in people 20 to 50 years of age.

In clinical gastroptosis, the stomach is low and elongated. The greater curvature often rests on floor of pelvis. The cardias portion is in normal position, but the pylorus is usually lower than normal. In normal individuals, the lowest portion of the greater curve rests 2 to 7 cm. below the interilliac line. Whereas in the case with clinical visceroptosis, the greater curve rests 9 cm. below the interilliac line on the average. Anatomically there is very little difference.

Coloptosis is also the result of relaxed ligamentous attachment. Muscular tone is usually wanting. Coloptosis is generally right sided. It occurs in region of hepatic flexure. The transverse colon often rests in pelvis.

In this series of 100 cases, the following were the predisposing causes: pregnancy, influenza, pyelitis, thyrotosicosis, and syphilis. These conditions caused a loss of fat, relaxation of ligaments, and lack of muscular tone.

The cardinal symptom of gastroptosis is a drag in epigastrium, usually occurring after meals. It is worse when the patient is upright. This symptom was present in 95% of the cases. Nausea occurred in 43%, vomiting in 42%, loss of weight in 39%, and gas in 33%. The Trendelenburg position gave relief in all cases.

The cardinal symptom of coloptosis is a drag in regions of splenic and hepatic flexures. Pain may occur in region of cecum. The symptoms are exaggerated when patient is upright and relieved when prone.

The patient may have migraine, vertigo, backache, fever, exhaustion, dyspnea, and neurasthenia.

The diagnosis is left almost entirely with radiologist. Gastro-intestinal lesions must be excluded. Pressure elevation of the stomach or colon gives immediate relief.

The heart, lungs, gastro-intestinal tract, and genito-urinary tract should be excluded.

Organic disease and clinical visceroptosis may exist simultaneously. Fifty-one per cent of these cases had had previous abdominal operations.

Conclusions:

1. Visceroptosis has clinical significance only when perverted function gives rise to symptoms in the absence of organic pathology.
2. The cardinal symptom is relief by manual elevation or by assuming Trendelenburg position.
3. The position of colon and stomach varies with different individuals and is only significant when it interferes with function.
4. The responsibility for a differential diagnosis is in the hands of the radiologist. A careful objective exclusion diagnosis of organic disease in gastro-intestinal tract must be made.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

A Clinical Consideration of Intestinal Obstruction. Miller, C. Jeff. The American Journal of Surgery, 8. 509-516. March 1930.

Surgery is the only treatment for intestinal obstruction. Exploration is warranted on the barest suspicion that it exists. A properly made exploratory incision seldom does harm, and surely it is a better thing to open the abdomen and find nothing than to open it after days of delay, when a moribund patient carries his diagnosis on his face, and find pathology which, because priceless time has been lost, no amount of surgical adjustment and no exhibition of surgical dexterity can possibly remedy.

The protean character of intestinal obstruction is very often overlooked. It is anything but a simple disease. It is true that in the beginning, unless there is immediate circulatory damage, the picture is one of a simple blockage of the faecal current by some mechanical obstruction. But once the pathology has lasted an appreciable time, even those cases which have begun as simple obstruction merge promptly into the vascular type. Then, with interference to the circulation, come damage to the bowel wall, gangrene, necrosis, even perforation with consequent peritonitis, and the elaboration of a toxaemia which is perhaps the most serious feature of all.

Pain, the earliest symptom and the most constant, is I would say, the inevitable concomitant of intestinal obstruction. I would remind you, however, that the abdominal viscera are largely insensitive, even when they have become pathologic, and that a proper comprehension of the mechanism by which pain is produced is even more essential in this case than it is in most other abdominal diseases. Only in rare instances is exact localization possible. The pain most usually originates vaguely about the umbilicus, less often in the epigastrium, but finally the whole abdomen is implicated.

Vomiting is by no means the constant symptom which pain is. In obstruction of the small bowel it is present from the start, at first as a reflex phenomenom, later because of a hypersecretory activity of this normally very active portion of the intestine, an activity which may be increased, aside from the obstruction, by misguided efforts to force fluids by mouth. In colonic obstruction, on the other hand, vomiting is usually a late symptom and it may never appear. As first the vomitus consists of gastric contents, then of bile-stained fluid, and finally of true faecal matter, unless this latter development is prevented by the fact that the small bowel obstruction acts upward as well as downward. There is no more misleading symptom than this same faecal vomiting. It is absolutely diagnostic of obstruction, but it is likewise absolutely prognostic of impending death.

Distention is the promptest and most conspicuous physical sign, but again it is an inconstant manifestation and a late one, except in volvulus of the sigmoid, when it may be prompt and alarming. Tenderness is never apparent until after distention has occured. Rigidity is evident only when localized peritonitis has set in, and in marked toxaemia, when the muscular defense is lacking, it may not appear at all.

Visible peristalis is pathognomonic, but it can be demonstrated only occasionally and late. Audible peristalsis, however, is a different matter, and many agree with Deaver that auscultation of the abdomen, either with the naked ear or with the stethoscope, should never be omitted.

Elevations of temperature, as would be expected in a condition that is not primarily inflammatory, are never apparent in the early stages of intestinal obstruction, at which time normal or distinctly subnormal temperatures are the rule. The pulse, on the other hand, tends to rise speedily, and this fact, taken in conjunction with the low temperature, is an important diagnostic point. Shock is apparent from the first when the circulation is affected, is always associated with distention, no matter what the primary causes of the obstruction, and is always a part of the toxaemic picture of the final stages. The blood pressure of these patients, therefore, must be carefully watched from the onset.

A routine urinalysis is, of course, imperative, but otherwise the laboratory offers small aid, except of a negative kind, in the early case. The blood count, unless the circulation is affected, remains within normal limits until inflammatory changes have set in. Continued vomiting eventually produces definite body changes, the most marked of which is a disturbance of the blood electrolytes, depending largely upon the location of the obstruction. Blood studies will often show a loss of chlorides, a rise in the nonprotein blood nitrogen, and a rise, sometimes to extraordinary figures, of the carbon dioxide combining-power of the plasma. These changes, however, occur too late to be of diagnostic value, and there is small ground for the suggestion, occasionally advanced, that the indications should be based upon repeated tests of this character. Renal damage is evident late, not only in the laboratory findings, but in the lessened fluid output, sometimes amounting to actual anuria.

The author is opposed to the administration of a barium meal in any suspected abdominal pathology, but is heartily in favor of the use of the x-ray as advocated by Case, of Chicago. The patient is examined, preferably in the standing position, and the relative levels of gas and fluid are studied as soon as the plate can be developed. This procedure takes but a short time, and in the hand of a skilled roentgenologist it can be very valuable in the elucidation of obscure cases.

Intestinal obstruction is very often a bolt from the blue, but it may have definite antecedents, the chief of which is a story of previous surgery, especially for pelvic diseases or for appendicitis with drainage, for these two types of operations are estimated to furnish from 20 to 40 per cent of all intestinal obstruction. The history of the present attack, with the character and chronology of the symptoms, is equally important. Then must come a physical examination sufficiently general to eliminate intercurrent disease, sufficiently detailed to investigate all areas of the abdomen, all hernial openings, all rectal pathology and, in a woman, all pelvic pathology. A urinalysis and a blood count should be routine, and blood may be taken for chemical study, though there is no justification for delaying operation until this type of investigation can be concluded. Finally, all of the findings must be carefully weighed and evaluated, there being always, well to the fore, the recollection that any patient suffering from intra-abdominal distress may be suffering from intestinal obstruction, and that the possibility is not such a remote one at that.

While the diagnosis is being considered, the important thing is to withhold any treatment by opiates or purgatives. By increasing a peristalsis that is already too active they serve to augment the distention of the overtried bowel and to increase its bacterial activity, while if the stomach, and very properly, refuses to tolerate them, the body, as the result of increased vomiting, is still further depleted of its fluids.

The condition of the patient is the determining factor in deciding upon the type and extent of the procedure. In the first group he is seen early and operated on promptly; his condition is good, and simple relief of the obstruction most often suffices for a cure. In the second group he is seen later; his condition is still fairly good, but toxaemia is either an actual or a strongly probable complication, and drainage of the bowel is done in addition to relief of the obstruction. In the third group he is seen late, indeed, often he is frankly moribund, and his toxaemia is so overwhelming that the primary obstruction is lost sight of. Operation is done only because a dying patient deserves his chance for life, slender though that chance be. Drainage of the bowel, through the first presenting loop of jejunum, is the only procedure warranted. If the patient survives, and most often he does not, the primary obstruction can be dealt with at a later date.

Operation for intestinal obstruction, I need scarcely point out, is anything but a simple procedure. The utmost manual dexterity is necessary, for, as Bunnell says, every manipulation, necessary or unnecessary, is a shove nearer the grave. The least that can be done is the safest for the patient. It may be a highly satisfactory thing to complete it on a corpse, and these patients have a disconcerting way of dying on the table under one's very hands. In short, surgical judgment here comes into its own. To speak very bluntly, only an experienced surgeon has a right to undertake operation for such a condition as this, in which craftsmanship means much, in which wisdom, which is the application of knowledge, means even more.

In the average case of intestinal obstruction there is no time for the rehabilitation of the patient, at least as we commonly understand the term. Two things, however, must not be omitted. Gastric lavage must be instituted and must be repeated until it returns clear, and it is a wise precaution, too, to leave the tube in situ during anaesthesia, lest, when the glottic reflexis obliterated, the patient drown in his own secretions, or lest, later, he develop an aspiration pneumonia. Parenthetically, I might add that in spite of all the arguments against it and in spite of all the advantages claimed for other types, my own preference is still for general anaesthesia, even for ether, admittedly the least auspicious of them all. In both local and spinal analgesia, it seems to me, the inevitable prolongation of the operation and the inevitable additional manipulations and trauma which increase the shock of an already badly shocked patient, outweigh all the advantages claimed for them.

In the second place, hypertonic salt solution must be promptly given, preferably by infusion, to restore the fluid balance and to replace the lost chlorides, if this loss can be demonstrated; otherwise isotonic saline, as suggested by Selling Brill, may be employed instead. The use of saline together with infusions of glucose and insulin, is continued after operation as long as the indications, based on the patient's clinical condition and the laboratory findings, warrant it. Other postoperative measures are employed according to the exigencies of the special case.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Kidney Infection—Pyogenic and Non-Pyogenic—From a Pathological Standpoint. Charles Y. Bidgood, M.D., F.A.C.S. American Journal of Surgery, May 1930.

A differentiation in the effect and ultimate results of kidney infection by bacteria of the colon-typhoid group and that of the coccus type, is very comprehensively given. The theory is based largely on the experimental work of Dyke, and is a plausible explanation of the clinical differences seen in coccus and bacillary kidney infections. He bases the outcome of any pyogenic infection of a parenchymal organ mainly on the question of drainage, though the dosage and virulence of the organism and the host immunity play a large part. That the infected kidney which has free drainage by way of the calices and pelvis, has a different course and prognosis from that of one with cortical abscesses single or multiple, is well known. His opinion is that organisms of the colon-typhoid group show a predilection for that portion of the kidney which has its origin in the Metanephros, namely the ureter, pelvis, and collecting tubules, or in other words, the efferent portions of the mechanism, while the cocci are disposed to lodge as emboli afferent to the glomeruli and allow no opportunity for pelvic drainage. The result in the latter is abscess formation, multiple disseminated, carbuncle, or perinephritic if rupturing through the cortex.

In the former type of infection there is usually recovery without much kidney drainage, provided pelvic drainage is good. The urine is always pathologic, while in coccal infections there may be a normal urine throughout the course.

Kidney and Ureteral Lesions Secondary to Adnexal Disease. A. Von Lichtenberg. Journal Urol. July 1930, No. 1.

Von Lichtenberg offers a new concept of clinical urology in the form of "system pathology" and "system diagnosis." In accounting for many of the upper urinary infections, which are spoken of as ascending or descending, he claims that the origin is much clearer in consideration of system pathology. Many kidney and ureter infections are secondary to infection of the prostate and vesicles, particularly stone formation and obstructive symptoms are closely related to disease of these accessory organs. He states that the knowledge gained by an examination of the genital tract, previous to instrumentation, would greatly influence the indication for such instrumentation as well as the diagnosis, prognosis and therapy. Our diagnostic technique is much better if we can keep in mind system pathology instead of organ pathology and the true pathogensis or etiological factor becomes much more clearly understood.

The therapy is carried out on the same basis. The primary etiological factor is sought and therapy directed toward it, even if the secondary changes are of greatest importance.

A resume of his therapeutic experiences is given and his cases divided into two large groups:

1. Those cases which can be cured through a conservation treatment of the adnexa.
2. Those in which surgery is necessary.

Conservative treatment consists of (1) diathermy, (2) ichthyol injections, (3) Sitzbaths, and intravenous injections of sodium iodide, mercurochrome, etc.

The surgical treatment is prostatectomy, vesiculectomy, and vesiculotomy, while ureteral kinks and strictures, kidney lesions, etc., are treated as indicated.

This bank is administrator of the estate of Dr. G. R. Jones, deceased, of Orlinda, Tenn. We wish to sell both his instruments, instrument case, and his library. We are advised that he was unusually well equipped for a country doctor in all these articles. Write today for information.

FIRST NATIONAL BANK
Springfield, Tenn.
W. P. Bryant, Cashier.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII SEPTEMBER, 1930 No. 9

By W. H. Wilmer, M.D., LL.D., Sc.D., Baltimore

W. H. Wilmer, M.D., LLD., Sc.D., Baltimore

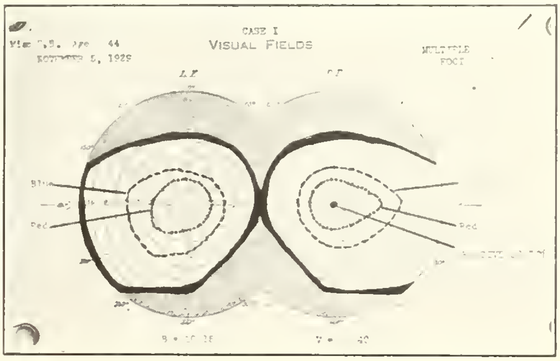
A CENTENARY celebration, whether of persons or of events, always creates in our young country a very special interest. The privilege, therefore, of taking even a small part in celebrating the hundredth birthday of the Medical Society of Tennessee is very great—a privilege which I appreciate highly.

The subject of my address was assigned to me by your very agreeable and efficient Chairman. Otherwise, I would never have had the temerity to attack this problem because of its voluminous literature; the confusion of chronic and acute conditions; the insertion of many cases of general optic neuritis in the reports; and the variance in opinion concerning its etiology, its pathology, and the best method of dealing with the lesion. However, no blame is to be laid upon your Chairman's broad shoulders, if my message is neither new nor adequate.

The acute form of this malady will not be included in this discussion, because it is often unilateral, rapid in development, recovery is the rule (often spontaneously), and it does not present the same problems in regard to etiology, prognosis and treatment. Consideration will be confined to those cases where there is an involvement of the papillo-macular fibres, chiefly or entirely, in contradistinction to a general or a perineuritis.

We are dealing with a tissue which may be considered a prolongation of the white matter of the brain. In its medullated fibres, there are no sheaths or cells of Schwann, but there are present true glial cells. Hence, its reaction in disease will be like that of the central nervous system and not that of the peripheral nerves. Cajal's (1) graphic description of the nerve cell or neurone is especially true of the optic nerve. He says: "The nerve cell or neurone is a structure which is exquisitely sensitive to normal and pathological stimuli. It is susceptible to many toxins and poisons that do not affect, or only slightly alter, the other histological elements."

This great susceptibility of the optic nerve to pathogenic agents, may account for the vast number of causal factors mar-

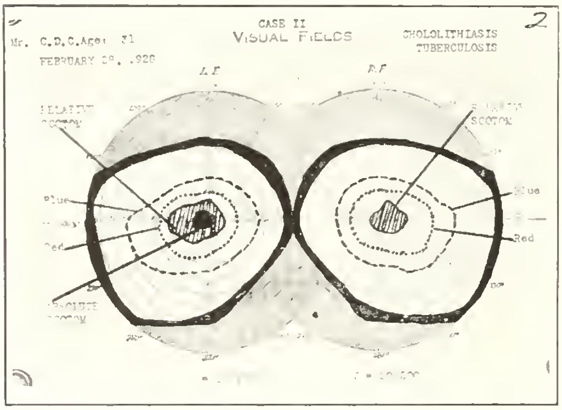


---

*Read by invitation before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Society, at the One Hundredth Celebration of its Founding, April 8, 1930. (From the Wilmer Ophthalmological Institute, Johns Hopkins University and Hospital).

shaled for the explanation of retrobulbar neuritis. They are so numerous that the wonder is that axial neuritis is not more universal. These causes will be mentioned later in the discussion of the relationship of axial neuritis to disseminated sclerosis, sinus diseases, etc.

A few of the cases that have come under my personal observation during the last few years, will be reported. Owing to the difficulty of determining the existence of disseminated sclerosis in these cases, a careful survey has been made in each instance; but to avoid repetition I will give here the outline of the examinations that have been made, and in each case will note only the positive findings: Nose and throat; teeth; sinuses; x-ray of chest, gall bladder, gastro-intestinal tract, skull, sella turcica and optic foramen; basal metabolism; blood; blood pressure; urine; kidney function; stool; tuberculin reaction; spinal fluid; medical; gynecological or genito-urinary; and neurological.

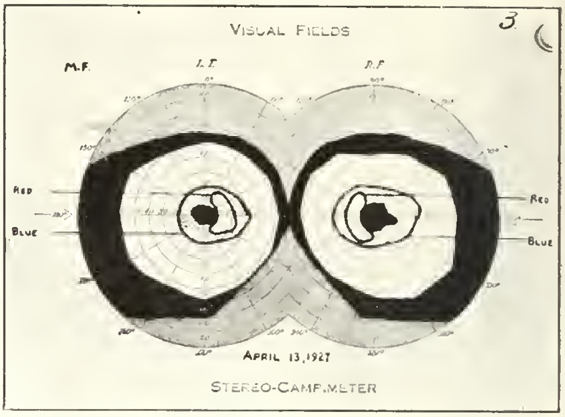


CASE I

Miss E. B. Age 44. White.

The patient was admitted for study on November 4, 1929. Family history negative. General health good. In January, 1929, the patient noticed that the sight of the right eye was becoming dim. The condition was diagnosed as optic neuritis. Two abscessed teeth were removed.

Examination of Eyes: Externally normal. R.E.V. with glass = 20/40+2; L.E.V. with glass = 20/15.



Visual Fields: R.E. Small relative scotoma for white and colors (Fig. 1).

Ophthalmoscope: R.E. Posterior cortical cataract; fundus not clearly visible. L.E. Media and fundus normal.

Summary of positive findings: (1) Two infected teeth; (2) sinus disease; polypi and pus found in left ethmoid; (3) tuberculin test (intradermal) positive to 1/1,000 mgm. of old tuberculin.

Diagnosis: R.E. Cataract incipient, retrobulbar neuritis.

The patient was seen in consultation and the later course of the disease is not known.

Impression: Three possible causes; infection of teeth and sinuses being most likely.

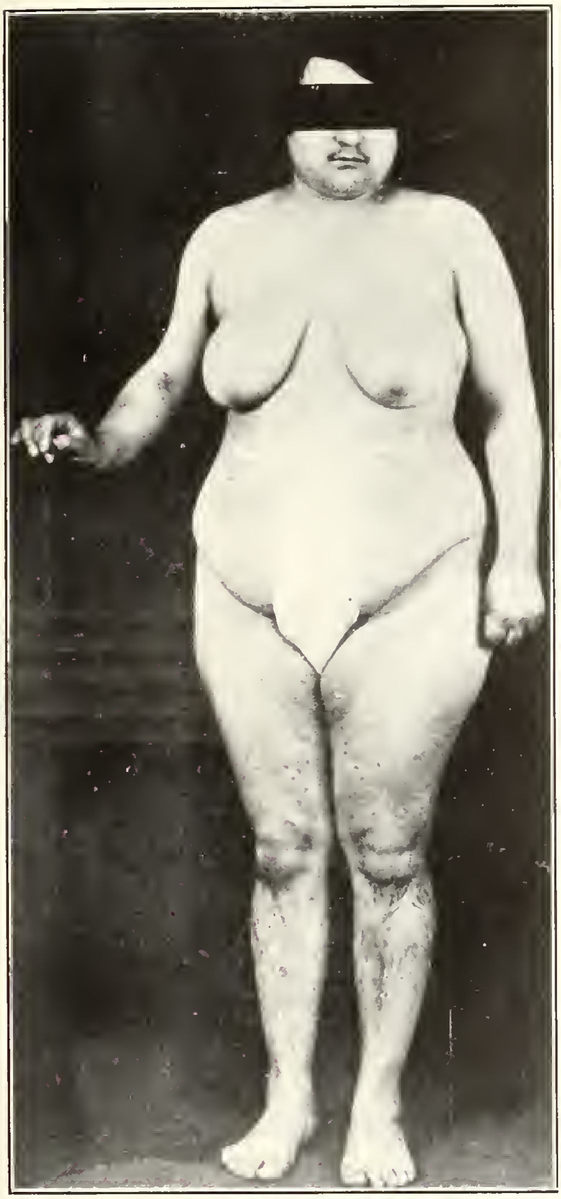
CASE II

C. D. C. Age 31. White. Male.

The patient was admitted for study on February 27, 1928, complaining of failing vision. Family history negative for ocular disease. Patient had been treated for lues, although he denied ever having had a genital lesion. His blood and spinal Wasserman had been negative. In July, 1927, he accidentally noticed that the central vision in the left eye was very poor. In September, 1927, the vision in the right eye began to blur, and by October was very poor. Since this time, there had been no progression. There was no definite history of excessive use of tobacco and alcohol.

Examination of Eyes: Externally negative. R.E.V. = 10/100-1; L.E.V. = 10/200.

Visual Fields: Normal for form, but with central relative scotoma in the right eye



and absolute central scotoma in the left eye (Fig. 2).

Ophthalmoscope: Media clear. Both eyes: pallor of temporal side of the discs, more marked in right eye. Light sense diminished (threshold). Fields good.

Summary of positive findings: Tuberculin test positive to 1/1,000 mgm. Stones in the gall bladder (cholo-lithiasis).

Diagnosis: Retrobulbar neuritis, bilateral.

The patient was not seen after discharge from the hospital. Operation upon the gall bladder was advised.

Impression: In this case only two causes for the eye lesion seem possible—affection of gall bladder and tuberculosis.

CASE III

Mrs. M. F. Age 26. White.

The patient was admitted April 10, 1927. Complains of loss of vision, first in right eye, later in the left eye. Family history negative. Past history: menstrual periods irregular. During the last six years, there has been a gain of 100 pounds in weight. Present illness: Three months ago, pain in the head and in the right eye, with almost complete loss of vision for three weeks. One week ago, there was a little pain in the left side of the head followed by a blurring of vision in the left eye.

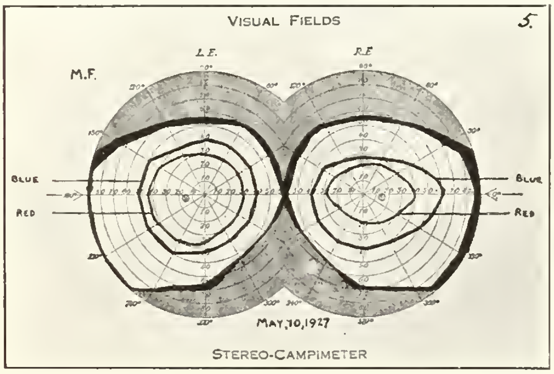
Examination of Eyes: R.E.V. = 1/200; L.E.V. = 20/100.

Visual Fields: Slight contraction; absolute central scotoma in each eye (Fig. 3).

Ophthalmoscope: R.E. Margins of disc sharply defined; nerve head quite white, especially on temporal side. L.E. disc normal in color; slight blurring of margins with a slight edema in surrounding retina.

General Examination: All tests negative. Photograph of patient shows the suggestion of endocrine disturbance (Fig. 4). Gynecologist suggests possibility of tumor of suprarenals. Neurologist suggests possibility of polyglandular disturbance.

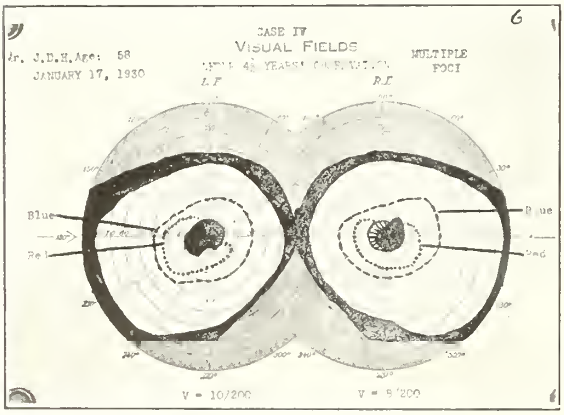
In view of the history of the right eye and the desperate condition of the vision, the ethmoids and sphenoids of both sides were opened. Cultures showed only a light growth of staphylococcus albus. After this operation, there was immediate and lasting



improvement in the scotomata of both eyes (Fig. 5). On May 10, 1927, R.E.V. = 20/100+1; L.E.V. = 20/30-1. June 9, 1927, R.E.V. = 20/100+1; L.E.V. = 20/15. Now, (three years later), R.E.V. = 20/70; L.E.V. = 20/15. At the present time, three years later, there is a central scotoma for red in the right eye. The left eye is quite normal. The papilla of the right eye is still pale; the fundus of the left eye quite normal.

This case is interesting from the strong suggestion of pituitary disturbance, and the absence of all positive findings except the sinuses, which were only slightly infected; also because it illustrates the value of perimetry.

Impression: Retrobulbar neuritis, bilateral, probably from sinus infection.



CASE IV

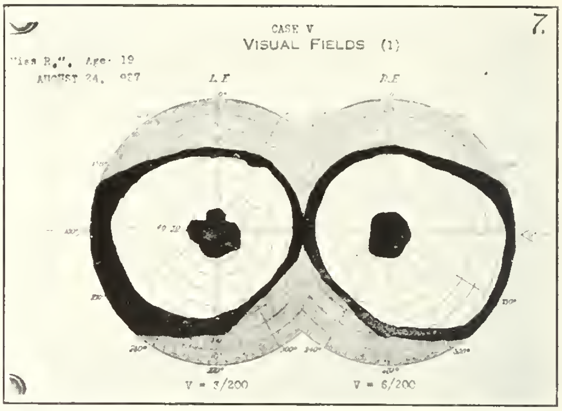
J. D. H. Age 58. White. Male.

This patient was admitted December 9, 1925, complaining of loss of sight. Family history revealed that one aunt and one uncle died of tuberculosis. No eye trouble. Past history: Seven years ago, discharge from ears; tonsils removed in 1924; vision has become very much blurred; slight hemorrhage in right eye; eleven bad teeth removed; ten days later, slight hemorrhage occurred in left eye.

Examination of Eyes: Externally normal. R.E.V. = 2/200; L.E.V. = 10/200.

Visual Fields: R.E. large central scotoma; (Fig. 6).

Ophthalmoscope: Media clear; temporal side of disc white, vessels normal size. L.E. Minute vitreous opacities; small hemorrhage above, and to outer side of disc; slight paleness of temporal side of disc.



Summary of positive findings: In addition to the infected (streptococcus) teeth removed, there was some pus and a cheesy polypoid mass in left ethmoid; the roots of the removed tonsils were badly infected. In the left one there was much pus, a culture of which showed beta hemolytic streptococcus. Later, a fibroid appendix was removed—no pus.

At present time, R.E.V. = 8/200; L.E.V. = 10/200. The scotomata remain in both eyes.

Impression: The cause of the axial neuritis in this case must be attributed to the teeth, tonsils, and sinuses.

CASE V

Miss R. M. Age 19. White.*

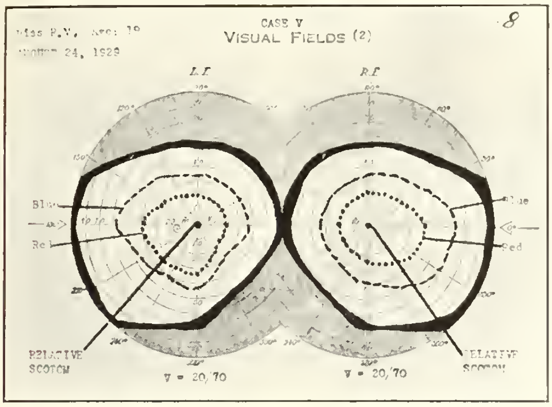
Admitted August 24, 1927, complaining of bad vision. Family history negative. Past history: At times there has been difficulty in controlling left foot. One year before admission, noticed difficulty in reading. In June, 1927, left eye vision became impaired. This was followed a few days later by a similar condition in the right eye. The condition was diagnosed as retrobulbar neuritis; infected tonsils were removed, and the sphenoids opened, which was followed by slight improvement in vision. R.E.V. = 6/200; L.E.V. = 3/200.

Visual Fields: Absolute central scotoma each eye. (Fig. 7).

Ophthalmoscope: Fundus of each eye

---

*Reported by courtesy of Dr. Cecil H. Bagley.



normal except slight pallor of temporal side of the discs.

Summary of positive findings: All tests negative except a low grade infection of sinuses already operated upon.

August 24, 1929: R.E.V. = 20/70; L.E.V. = 20/70.

The central scotomata are now merely relative (Fig. 8). Color of discs improved. A careful neurological examination fails to discover any evidence of disseminated sclerosis.

Impression: Disseminated sclerosis may develop later; but up to this time, sinus infection seems to be the chief factor in the cause of the retrobulbar neuritis.

CASE VI

J. N. Age 22. White. Male.

Admitted June 5, 1929. Complained of vision having been impaired for a month previously. Family history: A brother two years older has suffered from impaired vision for ten years due to some optic nerve trouble. (Since then an examination has shown that he is suffering from retrobulbar neuritis). (Fig. 9). Past history: One month before admission the vision in the left eye became dim. This progressed so rapidly that in two weeks he could not see light straight ahead. Two weeks ago, the right eye became involved in the same manner. Now he can see objects on the side but nothing straight ahead. R.E.V. = 8/200; L.E.V. = 2/200.

Visual Fields: Large central scotoma in each eye. (Fig 10).

Ophthalmoscope: Media clear; nerve heads normal in color and outline; marked physiological cup. In the right eye, there is a very small hemorrhage below, and to the nasal side of the macular region.

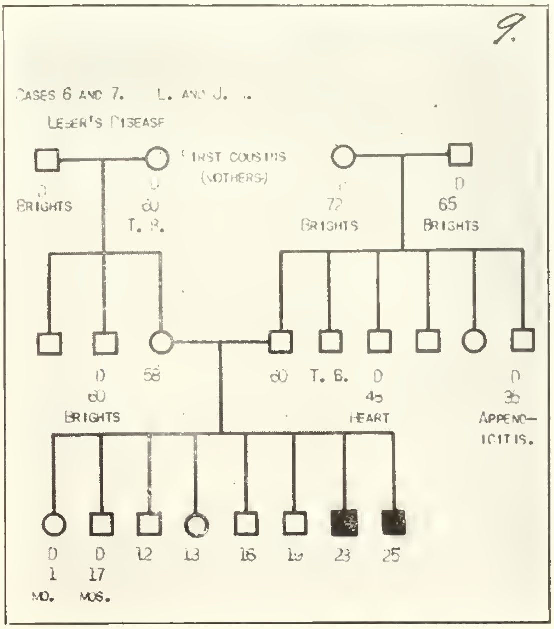
At the present time the temporal side of each nerve is quite white. While the sight has not improved, the patient has adjusted himself to the loss of central vision, and gets along very well.

Summary of positive findings: Ethmoid contained polypi; no pus; no growth from cultures. Infection of tonsils and adenoids.

Impression: The family history, with the findings of an absolutely similar condition in the eyes of an elder brother, leaves very little doubt but that this case belongs to the group of familial optic atrophy—Leber's Disease (Fig. 11).

Through the courtesy of Dr. John M. Wheeler, I have just seen a young man of 28 whose eyes present the same picture of Leber's Disease as the two brothers just mentioned (Fig. 12).

This patient gives the following family history: One uncle has the same eye condition as the patient. A maternal uncle, who died at 34 years of age, and a first cousin of the patient's mother also had eye trouble.



Case VII

H. S. Age 58. White. Male.

Was first seen December 14, 1926, when he complained of blurring of the vision, especially in the right eye. Family history negative. Past history: Abscess of the rectum, which occurred about the same time as the impairment of vision. In November, he consulted an oculist on account of changing blurred spots in the field of the right eye. The vision decreased in a few days from 20/20 to 20/30. Both antra were opened and the vision soon became normal but did not remain so. Smokes three pipes and two cigars a day, and uses alcohol moderately. R.E.V. = 20/30+2; L.E.V. = 20/20. Light sense reduced in both eyes, more so in the right.

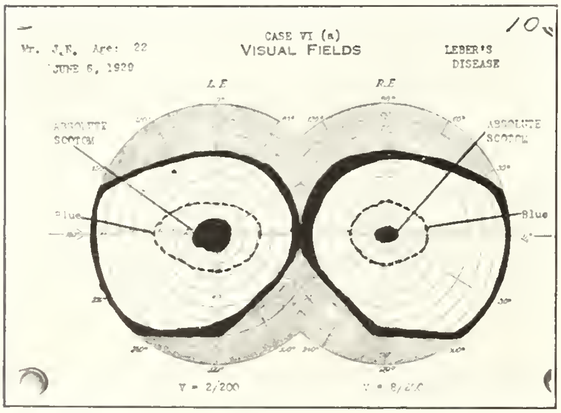
Visual Fields: Relative scotoma for form and absolute scotoma for color each eye (Fig. 13).

Ophthalmoscope: R.E. Upper nasal margins of disc blurred. Color normal. Arteries a trifle tortuous. L.E. fundus normal.

Summary of positive findings: The positive findings numerous. Infection of sinuses, particularly the right antrum. Tonsils infected (streptococcus aureus and albus). Prostate and processes of lumbar vertebrae show an infectious process. Sensitive to tuberculin, 1/10,000 mgm.

On January 8, 1928: R.E.V. = 20/15-1; L.E.V. = 20/15, and only a small, paracentral scotoma for red remained in each eye (Figs. 14 and 15).

Impression: With the multitude of possible sources of infection, it is impossible to say which is the cause of the eye lesion. In spite of the removal of the infected foci, the vision improved only slightly; but a decided and lasting improvement commenced after the use of tuberculin therapeutically.

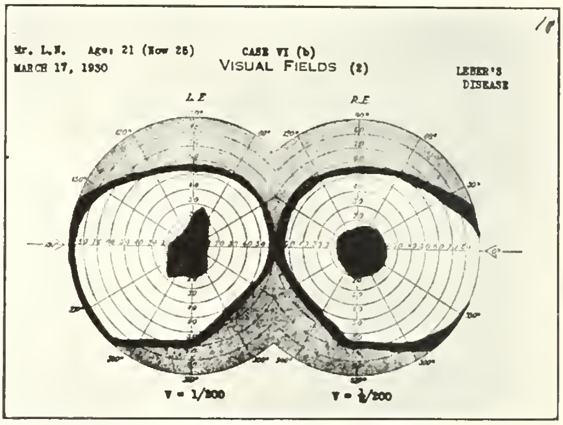


It seems at least probable that a tuberculous toxemia may have exerted some influence upon the condition.

Case VIII

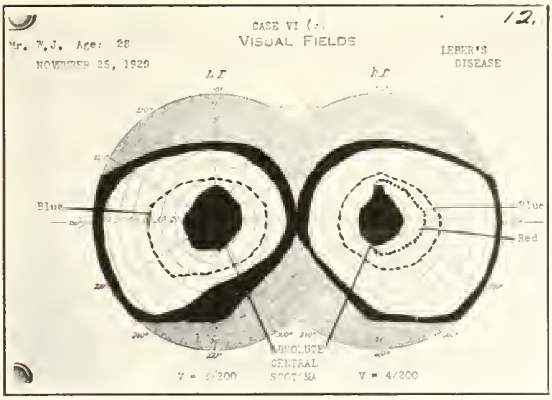
Miss M. A. C. Age 20 years. White.

Admitted July 30, 1929. Complains of blurring of vision in left eye for past week. Family history: History of alcoholism in father. Present History: Appendectomy in December, 1926. Only occasional sore throat. One attack of tonsilitis two years ago. Slight swelling of ankles for the past three months.



One year ago she had blurring of vision in both eyes for several days. This disappeared completely after wearing glasses regularly. Nine days ago pain occurred over the left eyeball. This became noticeable on pressure over the eye and upon motion. One year ago, things began to be blurred, and these symptoms have since then become worse. No disturbance whatever in the right eye. No headache. Was taken into the hospital with a temperature of 101, but it fell shortly after admission and has stayed quite normal. Slight nausea, but no vomiting. R.E.V. = 20/20; L.E.V. = 20/40.

Visual Fields: R.E. Normal for form and color L.E. Concentric contraction, particularly of the upper temporal field. Central scotoma (relative) for red (Fig. 16).



Ophthalmoscope: R.E. Normal. L.E. Three disc diameters below and slightly to temporal side of the disc a large coloboma of the chorioid and retina. On the temporal margin of the disc, there is a small colloid excrescence. The papilla itself is slightly hyperemic, and the margins are a trifle blurred.

Six months later, the vision, fields, etc., are practically unchanged, but the scotoma is less (Fig. 17).

Summary of positive findings: Tuberculin reaction, positive to 1 1,000 mgm. Tendon reflexes more active on left than on right side. Spinal fluid shows a positive globulin with a negative Wassermann reaction.

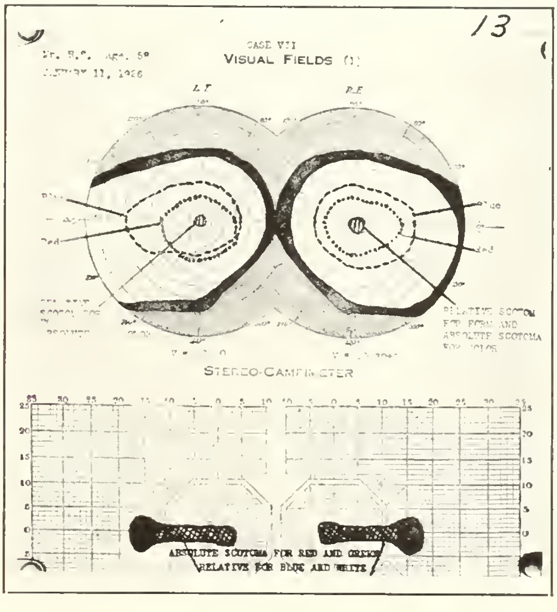
Impression: Unilateral axial neuritis with a probable beginning disseminated sclerosis.

Discussion

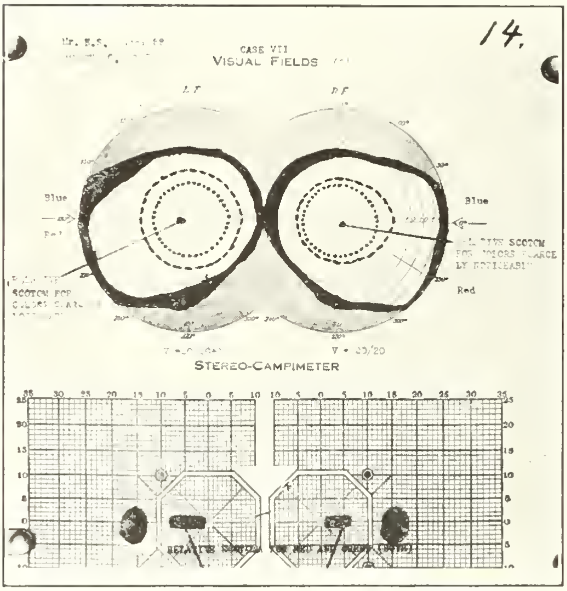
Symptoms: In the earlier stages of axial neuritis, the patient complains of a cloud or blur in the center, or near the center, of vision. Later this becomes a definite blind spot. The patient sees better in a moderate light than in a very bright one. The vision improves after a period of rest, and it is temporarily helped by inhalations of amyl nitrite. Later, the patient develops a habit of tilting his head, or of using his eyes eccentrically to see around the obstruction. According to Percival(2), the light sense difference is much impaired, while the light sense minimum (threshold) is but little impaired. In my experience both are reduced. The visual acuity is at times reduced as low as 1 200. In disseminated sclerosis, there is a great variability in the scotoma. The perimeter, or campimeter, gives the most accurate information of the extent of the involvement of the papillo-macular fibres. In the early stages, the scotoma is relative and affects particularly the perception of green and red. Later blue and white are not recognized, and the scotoma becomes absolute. There may be also irregular, peripheral field contractions. As associated perineuritis may add peripheral field defects to the central changes. According to Traquair(3), "The central defects in sinus disease are not characteristic, but their study is of great value from a negative standpoint in enabling one to distinguish them from tobacco amblyopia or defects from pituitary tumor."

In this connection Cushing's(4) remarks upon the "chiasmal syndrome" are very illuminating. He says: "This condition is of particular interest to the ophthalmologist, for he will naturally be the first person consulted for failing vision in the absence of other symptoms, and the diagnosis of toxic amblyopia (retrobulbar neuritis, etc.) is likely to be made."

In Leber's Disease, the central field defect is usually round or oblong in shape, occasionally irregular. It is absolute and permanent in character. According to Hensen (5) "the central scotoma in disseminated


13
CASE VII
VISUAL FIELDS (1)
L.E
R.E
Blue
Red
Red
RELATIVE SCOTOMA FOR FORM AND ABSOLUTE SCOTOMA
STEREO-CAMPIMETER
25
20
15
10
5
0
ABSOLUTE SCOTOMA FOR RED AND GREEN
RELATIVE FOR BLUE AND WHITE

sclerosis is very fleeting; in fact, disseminated sclerosis never causes a scotoma of longer than three months duration." This changing vision is well illustrated by the following letter which I have received recently from a woman concerning her son: "Last July he started to lose the sight of one eye. About two months later the other eye started to grow dim. He has had great trouble to see ever since. The sight comes and goes, one time being much better than another. He has been to see eye specialists and medical doctors. They could not find out the cause of the trouble. About three weeks ago he began to have trouble with his legs. He could not balance himself and would fall down anywhere. He went to a neurologist. He tells us that our son has multiple sclerosis." This description was given seven months after the onset of the visual symptoms.



Fundus—At first, as a rule, the fundus appears normal, or there may be a slight blurring of the margin of the disc with a definite hyperemia and fullness of the veins. Later, the temporal side of the nerve becomes pale, or the whole nerve appears atrophic in spite of a good peripheral visual field. The pre-existing physiological cup is much increased by the atrophy of the nerve fibres. Several times in very severe cases with much reduced vision, I have noted small hemorrhages in the retina approximately between the papilla and the macula. Actual swelling of the disc has been noted by some observers.

In cases of frontal lobe tumors, both Kennedy (6) and Lillie (7) have noted the occurrence of retrobulbar neuritis on the side of the tumor and a true papilledema in the other eye. But time will not permit the discussion of these interesting conditions.

Pathology—The following changes may be recognized in the orbital portion of the optic nerve: atrophy of the axis cylinders; inflammatory changes in the connective tissue trabeculæ; thickening of these fibres; sclerosis of the walls of the small nutrient blood vessels; and proliferation of the glial cells. Some observers [Marburg (8)] believe that the axis cylinders and the ganglion cells of the retina, are involved primarily; while others hold the view that the changes in the nervous elements are secondary to a pre-existing inflammation. In the case of the so-called toxic amblyopias, it is generally thought that the primary change is in the ganglion cells of the macular region of the retina, and that the papillo-macular bundle is secondarily affected (ascending retrobulbar neuritis). Observers of experience generally are of the opinion that the axial fibres of the optic nerve are particularly highly organized, and, therefore, especially vulnerable to endogenous toxins, ectogenous poisons, pressure, and inflammatory processes. Traquair (3) feels that the changes in the optic nerve may result from "venous congestion of the nerve, leading to impaired nutrition and suffocation of the nerve fibres." Percival (2) calls attention to the observation of Samelsohn of the part played by the optic foramen in constricting the optic nerve. Herzog (9) thinks that the cases of retrobulbar neuritis of nasal origin, are really circumscribed serous meningitis which spreads to the optic nerve from the diseased sinuses through very narrow communications.

In Leber's Disease, the condition may be a true abiotrophy similar to the changes in the retina in the so-called "retinitis pigmentosa." I do not know of any instance where there has been a microscopical examination of the optic nerve in this disease.

Disseminated Sclerosis—Price (10) says: "Apart from syphilis, disseminated sclerosis is the commonest organic disease of the nervous system in English and Continental practice. It is said to be less frequent in America." Indeed the causes of retrobulbar neuritis and disseminated sclerosis, as given by various authors, are interchangeable, as will be seen from the following parallel columns.

Causes of Disseminated Sclerosis	*Causes of Retrobulbar Neuritis*
Acute infectious diseases (typhoid, smallpox, scarletina, measles, etc.); influenza; cholera; whooping-cough; acute articular rheumatism; puerperium; malaria; diphtheria; lightning intoxication with metallic poisons; tin; carbon monoxide; mercury; alcoholism; injury; violent emotion; overstrain; chill; shock; toxins (disputed by some observers); endogenous and constitutional (Oppenheim).	Acute infectious diseases (typhoid, smallpox, scarletina, measles); influenza; cholera; whooping-cough; acute articular rheumatism; puerperium; malaria; diphtheria; various chemical poisons; injury; emotional strain; chill; infection of tonsils and teeth; sinus disease; gastro-intestinal intoxication; anomalies in development; bacillus subtilis (Clark); acetenuria (Francis); pellagra (Calhoun); diabetes; albuminuria; tuberculosis (?); embolism (various authors).

Traquair (3) considers disseminated sclerosis as the cause of retrobulbar neuritis in 20 per cent to 40 per cent of the cases; Marburg (8), 50 per cent to 55 per cent; Scheerer (11) as actual or probable, 71.5 per cent; and Lagenbeck [quoted by Cords (12)] 77 per cent. In this country there seem to be fewer cases of disseminated sclerosis associated with retrobulbar neuritis. Indeed, in some localities disseminated sclerosis itself seems less frequent. Out of the 12,000 autopsies made in the Department of Pathology at Johns Hopkins University Medical School, there were only two cases of disseminated sclerosis. Of course, one must consider that few patients with multiple sclerosis die in hospital.

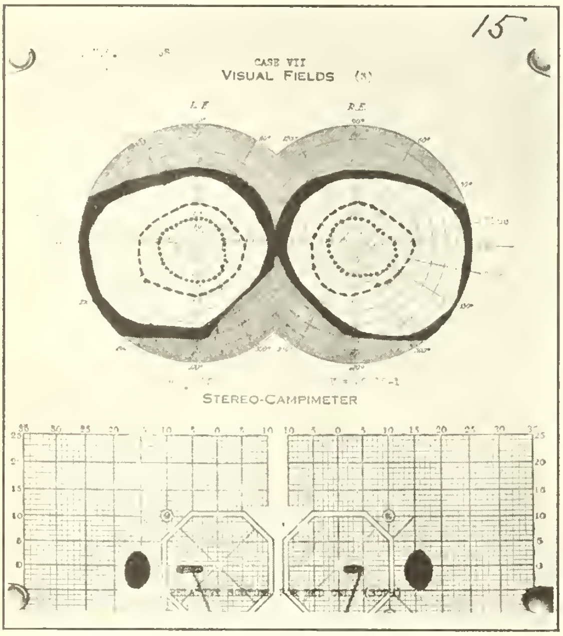
Of the patients in the Institute for study, .59 per cent, or thirty cases, have been affected with retrobulbar neuritis. I have followed closely the history of eighteen out of the thirty cases. One of them is associated with disseminated sclerosis and one suggests that possibility.

Disseminated Sclerosis (*pathology*): The island-like lesions in the brain, spinal cord, and cranial nerves, appear as grayish blue plaques, varying in size from a fraction of a mm. to 10 mm. in diameter. The white matter is chiefly involved; and according to Price (10), the inflammatory changes are the initial lesions, and the alterations in neuroglia and nerves are secondary. There is edema, cellular infiltration, increase of interstitial connective tissue, thrombosis of vessels with formation of new ones and disintegration of the myelin sheath of the nerve cylinders. The essential feature of the process is the great persistence of the axis cylinders with absence of secondary degeneration, which accounts for the many and varying symptoms. According to Zeigler [quoted by Oppenheim (15)] there is congenital tendency to proliferation of glial tissue in these cases.

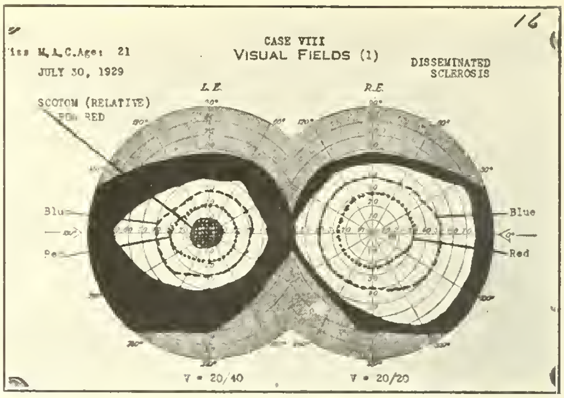
Sinus Infection—The relation of diseases of the paranasal sinuses to axial neuritis is especially confused. Its estimation as a cause of axial neuritis varies all the way from being considered negligible to being held as the chief factor.

Onodi (14) states that more complete study resulted in the establishment and confirmation of thirty-eight forms of morphologic relations of the optic nerve to the sphenoid sinuses and the posterior ethmoid cells. Two of the illustrations (Figs. 18 and 19) show the difference in the relation of the nerve to the paranasal sinuses in different persons and in different portions of the optic nerve.

Sinus disease is very common in this country. Perhaps this is due to the great difference between the dry air of our overheated houses and the cold, humid outside air of winter. For it requires a very rapid adjustment on the part of the naso-pharyngeal membrane to meet the changes from a house temperature of 70° F. with a humidity of 30°, to an outside atmosphere of 20° F. with a humidity of 87°.

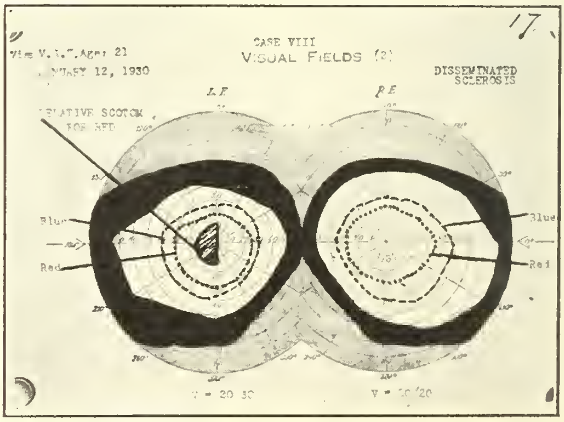


Is it not possible that there may be a causal relation between diseased sinuses and disseminated sclerosis, the infectious agent gaining entrance to the central nervous system through the sinuses? The fact that so far no pathogenic agent has been isolated in disseminated sclerosis, suggests the possibility that this agent may belong to the group of so-called "filtrable viruses." The prompt and radical sinus operative procedure in this country may account for the fact that disseminated sclerosis is less frequent here than abroad. Markbreiter, as quoted by Herzog(9), has found sinus disease to be the cause of 79 per cent of the cases of axial neuritis, while Edwin Wallis (also quoted by Herzog) had found the percentage as high as 90 per cent. In our country, Oliver and Crowe(15) state that "infection of the accessory nasal sinuses is one of the common causes of retrobulbar neuritis." But the authors add this very significant sentence: "On the other hand, only a small percentage of patients with infection of the sinuses have a retrobulbar neuritis as a complication."



In contradistinction to the feeling that so many cases of axial neuritis are due to sinus disease, Weill(16) noted the fact that 85 per cent of his cases recovered without surgical procedure, which he thinks precludes the possibility of their being caused by the sinuses. In England, the general opinion is expressed by Mayou(17) when he says: "If it (sinus trouble) was a cause of retrobulbar neuritis, it was a rare one, with which six of my colleagues agree."

Leber's Disease—In Leber's Disease also, the patients are generally youthful. In this condition as well as in disseminated sclero-



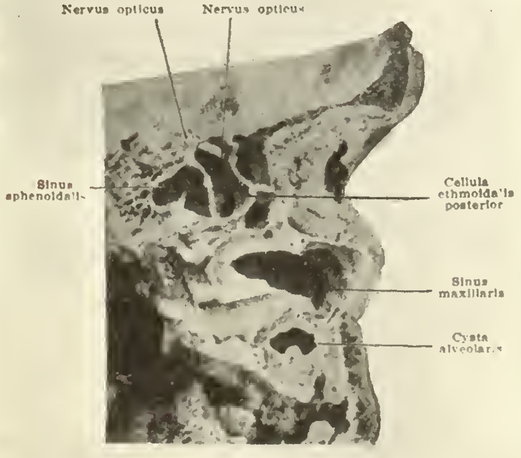
sis, there may be mental and nervous affections. But it is helpful in making a diagnosis to realize that the large majority of those affected are males; that the onset of the disease is rapid; the scotoma permanent; and as a rule, peripheral field defects, so often seen in disseminated sclerosis, are absent. The family history of other male members of the family with a similar eye trouble, is also helpful in making a diagnosis. As in retinal abiotrophy, the onset of the disease is influenced by certain outside factors, such as serious illnesses, focal infections, toxemias, etc.

Teeth, tonsils and other foci of infection, often play a part in axial neuritis. White (13), in 46 cases, found the cause of the optic nerve disturbance to be due to the teeth in 30 per cent, tonsils 33 per cent, a combination of teeth and tonsils in 10 per cent. In my own experience, infected teeth and tonsils often occur with other possible causes.

Of the 5,058 patients admitted to the Institute for survey, thirty suffered from retrobulbar neuritis. Of these, eighteen cases have been followed for some time and the following gives the probable cause:

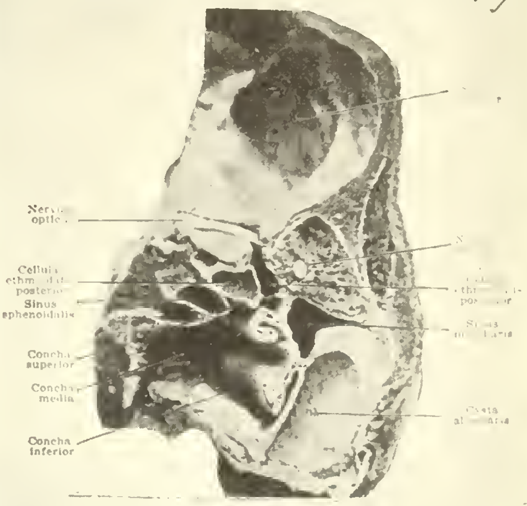
Multiple sclerosis probable	11%
Sinus disease probable	11%
Gall bladder probable	6%
Diabetes probable	6%
Leber's Disease	16%
Tuberculosis possible	6%
Multiple foci (teeth, tonsils and sinuses)	44%

18



Optic Nerve free in Post. Eth. Cell
(fr. A. Onodi, Budapest)

19.



Optic Nerve well protected
fr. Post. Eth. Cell.
(fr. A. Onodi, Budapest)

Fifty per cent of these patients were sensitive to tuberculin. In one case, the cause is put down as probably tuberculosis because the vision and the scotoma did not improve after removing the foci of infection; but the improvement followed the therapeutic use of tuberculin. This improvement has been permanent.

CONCLUSIONS

1. In all cases of axial neuritis a detailed family history is helpful.

2. A complete survey should be made, including an examination of the spinal fluid in all doubtful cases. A positive curve with a negative Wassermann is highly suggestive of disseminated sclerosis.

3. Frequent painstaking perimetric measurements are essential features of the study of these cases.

4. In disseminated sclerosis, axial neuritis may appear late in the disease; but again, it may be the first symptom that brings the patient to the physician. Consequently, cases that are classed as due to sinus disease or some other focus of infec-

tion may later develop disseminated sclerosis.

5. In both disseminated sclerosis and Leber's Disease, the subjects are young, and nervous, and mental defects may be present. The family history, the sex, and the constant absolute central scotoma in Leber's Disease are helpful in making a differential diagnosis.

6. The possibility of affections of the pituitary body must always be kept in mind.

7. In the case of many possible sources of axial neuritis, it is often impossible to name the only and essential one.

TREATMENT

1. Removal of any manifest focus of infection, and the treatment of any discovered toxemia, such as syphilis, tuberculosis, diabetes, etc.

2. In chronic axial neuritis where no source of infection can be found, it is legitimate to explore the sphenoidal and posterior ethmoidal cells for the purpose of diagnosis.

3. In Leber's Disease and disseminated sclerosis, frankly infected sinuses should be drained and other foci of infection removed.

4. In our present knowledge, or rather want of it, in regard to disseminated sclerosis, there is but little of specific therapeutic value that can be suggested. General hygiene and regimen are important.

5. In Leber's Disease, the greatest help lies in telling the patient frankly of his condition and helping him to face life with the prospect of impaired vision. Healthful employment is most desirable. The patient should be told that he will not be blind, and that at fifty he will probably be better able to adjust himself to the central blindness than at the present time.

BIBLIOGRAPHY

(1) Cajal, S. Ramon y: "Degeneration and Regeneration of the Nervous System." Vol. 1, 1928, Oxford Univ. Press, London: Humphrey Milford.

(2) Percival, A. S.: "Retrobulbar Neuritis and Associated Conditions." Trans. Oph. Soc. U. K., 1926, 46:392.

(3) Traquair, H. M.: "Clinical Perimetry." London, Henry Kimpton, 1927, 115.

(4) Cushing, Harvey: "The Chiasmal Syndrome of Primary Optic Atrophy and Bitemporal Field Defects in Adult Patients With a Relatively Normal Sella Turcica." Arch. of Ophth. No. 5, May. 1930.

(5) Hensen, H.: "The Importance of the Duration of the Central Scotoma in Cases of Retrobulbar Neuritis for the Diagnosis of Multiple Sclerosis." Klin. Monatsbl. f. Augenheilk., 1924, 72:75.

(6) Kennedy, F.: "Retrobulbar Neuritis As an Exact Diagnostic Sign of Certain Tumors and Abscesses in the Frontal Lobes." Amer. J. Med. Sc., 1911, 142:355.

(7) Lillie, Walter I.: "Ocular Phenomena Produced by Nasal Lesion of the Frontal Lobe." J. A. M. A., 1927, 89:2099.

(8) Marburg, O.: "Retrobulbar Neuritis and Multiple Sclerosis." Zeitschr. f. Augenh., 1920, 44:125.

(9) Herzog, H.: "Retrobulbar Neuritis." Arch. f. Augenheilk., July 1928, 292:321.

(10) Price, F. W.: "A Textbook of the Practice of Medicine," Third Ed., 1929. Oxford Univ. Press.

(11) Scheerer, R.: "Causation of Retrobulbar Neuritis." Klin. Monatsbl. f. Augenh., Aug.-Sept., Vol. 83.

(12) Cords, F. C.: "Critical Observations on Rhinogenic Retrobulbar Neuritis." Klin. Monatsbl. f. Augenheilk., 1922, 69:129.

(13) Oppenheim, H.: "Text Book of Nervous Diseases, Fifth Ed., Vol. 1:332. G. E. Stechert & Company, New York, 1911.

(14) Onodi, A.: "The Optic Nerve and the Accessory Cavities of the Nose." An. of Otol., Rhin. & Laryng., Vol. xvii, No. 1, March, 1908.

(15) Oliver, K. S., and Crowe, S. J.: "Retrobulbar Neuritis and Infection of the Accessory Nasal Sinuses." Arch. Otolaryn., Dec. 1927, Vol. 6:503.

(16) Weill, Georges: "The Relationship Between Inflammation of the Posterior Sinuses and Disease of the Nervus Opticus." Arch. Oph., Vol. 1, No. 3, March 1929.

(17) Mayou, M. S.: "Discussion of Optic Neuritis in Its Relation to Sinusitis." Proceedings Royal Soc. of Med., Vol. xix, No. 6, 1926, 57.

(18) White, Leon E.: "The Location of the Focus of Optic Nerve Disturbances From Infection." Jour. Oto., Rhin. & Laryng., Vol. 38, 1928.

THE RATIONALE OF HYSTERECTOMY FOLLOWING CAESAREAN SECTION IN CASES OF INTRA-UTERINE INFECTION*

By Jere Lawrence Crook, A.M., M.D., F.A.C.S., Jackson

BY THE marvelous mystery of Creation the mothers of men endure both the agony and the hazards of the birth miracle. To alleviate the suffering and lessen the danger of this ordeal of motherhood has ever been a challenge to the medical profession, and the eagerness and success with which we respond to this challenge is a fair index of our humane and scientific progress.

The first Caesarean Section, tradition tells us, saved Caesar, the soldier and statesman of ancient Rome to fight her battles and leave behind him an immortal record of his Gallic victories in a language which though dead for centuries, yet lives to plague the weary Freshman, veil with mystery the nomenclature of medicine, and shed a halo of awe over the service of the Church.

Postmortem Caesarean Sections were the rule until the Fourteenth century, until which time there exists no record of the operation being performed upon a living mother.

The maternal mortality (56 to 84%) was so great before the era of aseptic surgery that the operation was condemned by Ambroise Rare, Mauricean and others, and for a long time was practically abandoned. The cause of death was usually hemorrhage or sepsis. With the uterine wound left gaping, as was done at that time, this is not surprising. Although the use of the uterine suture was advocated and practiced in the beginning of the Nineteenth century, the mortality remained high until Porro (1876) supplemented the ordinary section by amputating the uterus and including the stump in the abdominal suture.

When confronted with a case of positive uterine infection from previous efforts at delivery by intra-uterine manipulations—manual, instrumental, or both combined—which have demonstrated the futility of further efforts to deliver per viam naturale the only logical choice is craniotomy or Caesarean Section followed by hysterectomy. It is interesting in this connection to note the opinion of leaders in this field a few years ago.

In a paper by Baldwin on "Caesarean Section with Hysterectomy in Case of Positive Infection," in the New York Medical Journal, August 23, 1913, after stating that "in conditions of undoubted infection craniotomy may not save the life of the mother for in such septic cases it carries with it a mortality of 10 per cent to 15 per cent," he continues with a report on personal letters of inquiry which he wrote as to the proper treatment of a patient with undoubted sepsis and a contracted pelvis, but with a living child. He received replies as follows: Gustav Ziuke, Cincinnati—"Vaginal removal of child. Abdominal hysterectomy contraindicated." Asa B. Davis, New York—"Craniotomy. I have been tempted to perform Caesarean Sections upon such patients, but the results are almost invariably bad for mother and child." C. S. Bacon, Chicago—"Caesarean Section no longer possible. Craniotomy." J. Whitridge Williams, Baltimore—"Craniotomy. Caesarean Section only after the great risks associated with it have been explained to the parents and accepted by them. In that event, I should remove the entire uterus after delivery." Ellice MacDonald, New York—"Would consider no mode of delivery save by pelvic route." Joseph B. DeLee, Chicago—"Craniotomy. Caesarean Section even extraperitoneal not justifiable." Barton C. Hirst, Philadelphia—"Vaginal delivery, or extraperitoneal Caesarean Section, if the parents are particularly anxious for the life of the child." E. P. Davis, Philadelphia—"Porro operation." J. Clifton Edgar, New York—"Craniotomy." It will be seen from this that at this time, 1913, any sort of abdominal delivery in infected cases was looked upon with great disfavor by most of the leading obstetricians. Without present day improvements in technic, it would be interesting to have a similar report now. I do not believe 'Craniotomy' would be the operation of choice.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

As long ago as the latter part of the Nineteenth Century, following the advent of the Porro operation, French surgeons had practically abandoned craniotomy.

Personally I feel that craniotomy with its horrible technique, repulsive alike to patient and surgeon, is a barbaric legacy from the pre-anesthetic and pre-aseptic era. Before presenting the case on which my paper is based I desire to quote extracts from a rather comprehensive study of the literature.

E. M. Hawks in American Journal Obstetrics and Gynecology, St. Louis, 1929, affirms that "Those contaminated cases with disproportion or cervical distortia have formed a dangerous and difficult group. They have been the predisposing cause for almost one-third of the deaths. These cases have sounded the death knell of the classical Caesarean Section in the contaminated patient.

"In the selection of the type of Caesarean Section the classical operation is reserved for the elective case, i.e., the woman not in labor. It is useful when speed is essential as in a case of accidental hemorrhage with little dilatation and the mother and baby in danger. The other types are used in the potentially infected cases, although some of the operators have done the low flap operation in the clean and elective cases also. The choice is made usually according to the supposed degree of contamination in the order of first, Low Flap; second, Peritoneal Exclusion; third, Latzko; fourth, Porro."

He concludes by stating that the mortality from classical Caesarean Sections performed after several hours of labor has been from 10% to 15%.

In a survey by Alfred C. Beck of Caesarean Sections done at the Long Island College Hospital several years ago, it was shown that peritonitis caused the death of over 10% of the patients operated on after a test of labor. At autopsy it was found that there was either a stitch abscess in the uterus or a broken down wound through which contaminated material from the infected uterus escaped into the peritoneal cavity.

L. A. Crowell in Southern Medicine and Surgery, says in speaking of Caesarean Section: "Good results are obtained with well selected cases, but the mortality rate is very high in late and infected cases. Hence, different writers have variously placed the mortality rate at from 2% to 26%, depending on the type of case. E. Holland, writing in Lancet, 1920, reports 3,314 Caesarean Sections performed throughout Great Britain from 1911 to 1920 with an average mortality of 4%, with a mortality of 1.6% in the early complicated cases and a 27% rate in those cases in which normal delivery had been attempted.

Polak, of Brooklyn, in a report of 2,000 cases of Caesarean Section in North America, including Johns Hopkins, University of Pennsylvania, Sloans Maternity, New York Lying-In, and Jefferson, reports 2.9% mortality in clean cases during early stages of labor, and 6.6% mortality in cases which had been previously examined or handled before admission to hospitals, and a mortality of 11.55% in cases thought to be infected. He also reports 200 cases from Long Island College Hospital with 3.35% in clean cases, 14% in cases handled previous to admission to the hospital, and a combined mortality of 6.1% in all cases.

In a survey of Caesarean Section in the Burough of Brooklyn, City of New York, Chas. A. Gordon reports on 871 cases of Caesarean for contracted pelvis divided into important groups in which the maternal mortality is subdivided as follows: Cases not in labor, 2.5%; early in labor, 6.4%; late in labor, 7.7%; after attempts at delivery, 13.6%. In the third group, those late in labor, there were 403 cases. In six of these hysterectomy followed the Caesarean without a single death. He also reports 15 other Caesarean hysterectomies with death in three cases, or 20%. The indications for hysterectomy were as follows: Previous Caesarean, 1 case; fibromyomata, 5 cases; contraction ring, 1 case; endocarditis, 1 case; pelvic abscess, 1 case; uterine inertia, 1 case; ruptured uterus, 4 cases, and dead fetus, gangrenous uterus, 1 case. A mortality rate of 20% seems high until we consider the indications in those cases which died. One was the case of pelvic abscess, the other two rupture of the uterus. Summing up, we have 3 deaths in 21 cases, or 14%. Deducting 4 cases of rupture of the uterus and 2 deaths, the true maternal mortality in this series for Caesarean Hysterectomy is 6%.

T. L. Montgomery gives us the results of his extensive study on "The Morbidity and Mortality of Caesarean Section," which was read before the Obstetrical Society of Philadelphia, October 7, 1926. He quotes Routh and Holland-Kerr, who report on Caesarean Section as performed in Great Britain from 1891 to 1910.

"Routh in his comprehensive report of 1911 gives the maternal mortality of Caesarean Section when performed for contracted pelvis under favorable conditions as 2.9%; when performed after the patient was in labor, the membranes ruptured, but no attempts at delivery had been made, 10.8%; when attempts had been made to deliver by forceps, etc., or where repeated examinations had been made, the mortality was 34.4%. He reports 14 cases in which Caesarean Section with hysterectomy was performed for the potentially septic patients with no maternal mortality.

"The carefully prepared report of Kerr-Holland some ten years later shows somewhat improved mortality for Caesarean Section in contracted pelvis. These two writers classified the cases as follows:

(a) "Not in labor, maternal mortality 1.6 per cent, fetal deaths .8 per cent, infant mortality of survivors 3.9 per cent.

(b) "Early in labor, maternal mortality 1.8 per cent, fetal deaths 1 per cent, infant mortality of survivors 5 per cent.

(c) "Late in labor, maternal mortality 10 per cent, fetal deaths 5 per cent, infant mortality of survivors 5 per cent.

(d) "After induction of labor, maternal mortality 14 per cent.

(e) "After attempts at vaginal delivery, maternal mortality 27 per cent, fetal deaths 27 per cent, infant mortality of survivors 10.9 per cent.

"This report shows a high mortality in late Caesarean Section not only for mother and fetus, but also lessened chance for the living infant who survives the long labor and late section.

"Holland in this same report gives a maternal mortality of 17 per cent in 46 cases of Caesarean Section with hysterectomy.

"In his 1911 report, Routh classifies the results of Caesarean Section for fibroma uteri complicating pregnancy and labor according to the following modes of treatment:

(a) "By Caesarean Section alone, 20 cases, maternal mortality 30 per cent, fetal mortality 20 per cent.

(b) "By Caesarean and myomectomy, 5 cases, no maternal or fetal deaths.

(c) "By Caesarean Section and supravaginal hysterectomy with extraperitoneal disposal of stump, 7 cases, maternal mortality 14.3 per cent, fetal mortality 14.3 per cent.

(d) "By Caesarean Section and supravaginal hysterectomy with intraperitoneal disposal of cervical stump, 26 cases, maternal mortality 15.4 per cent, fetal mortality 15.4 per cent.

(e) "By Caesarean and panhysterectomy, 13 cases, maternal mortality 7.7 per cent, fetal mortality 37.7 per cent.

"The report of Kerr-Holland mentions 88 cases with a total mortality of 10 per cent and fetal mortality of 12.5 per cent.

"The 88 cases were treated as follows:

(a) "By Caesarean Section alone, 23 cases, maternal mortality 9 per cent.

(b) "By Caesarean Section and myomectomy, 23 cases, maternal mortality 13 per cent.

(c) "By Caesarean Section hysterectomy, 42 cases, maternal mortality 9 per cent.

"Routh quotes a comparatively small group of cases in which Caesarean Section was performed for antepartum hemorrhages.

(a) "For concealed accidental hemorrhages, 4 cases, maternal mortality 50 per cent.

(b) "For placenta previa, seven cases, maternal mortality 14 per cent, fetal mortality 57 per cent.

"Kerr and Holland report a much larger series in which Caesarean Section was performed for antepartum hemorrhage.

(a) "For placenta previa, 139 cases, maternal mortality 11.5 per cent, fetal mortality 7 per cent, infant mortality of surviving infants 22.3 per cent. (Holland remarks on the high percentage of infant deaths among those who survive the immediate effects of the operation.)

(b) "For accidental hemorrhage, 66 cases, maternal mortality 27 per cent, fetal mortality 86 per cent.

"Of these 66 cases of accidental hemorrhage, 36 cases were treated by simple Caesarean Section with a maternal mortality of 11 per cent, while 30 were treated by Caesarean Section hysterectomy with a maternal mortality of 46.6 per cent."

With these facts in evidence as gleaned from the literature, I desire to place on record a report of my own case:

Mrs. B. T., female, white, age 24, brought to The Crook Sanatorium at 1 P. M. on January 7, 1930, by Dr. E. Farrow, of Bells, Tennessee. Her past history is negative. Menses began at 13, were irregular and painless and lasted from five to seven days. Two years ago had some x-ray treatment, since which time menstruation has been every two weeks. Married at age 20, no previous pregnancies. Last menstrual period began about April 7, 1929. Normal pregnancy up to term with only slight nausea in first two or three months.

Present Illness

This patient went into labor about 4 A.M. on January 7, 1930. The physician called to attend her had never seen her before. The first stage was short, lasting but three or four hours. After an hour or two of hard second stage labor it was found that the head was not descending and the patient was anesthetized and an attempt made to do a high forceps delivery. This being unsuccessful a version was done and the foetus extracted as far as its lower costal margin. Further delivery was found to be impossible and the patient was then brought to the hospital.

Examination

The patient was a well nourished white woman, rather stout. The skin was pale, cold and clammy, and the pulse was not perceptible. Her every appearance was that of a patient in extreme shock. Head and neck negative, lungs clear throughout. Heart sounds very weak but no murmurs heard. Heart rate 180. Blood pressure 88/70. The abdomen was enlarged and the uterus could be felt extending up to the xiphoid process of the sternum. Protruding from the vulva was the lower half of a large feotus. The tightness with which the upper half of this child was wedged into the pelvic outlet is shown by the fact that catheterization of the mother was impossible and attempts to move the body either up or down met with failure. As no specimen of urine could be obtained the condition of the kidneys was not known before the operation.

Procedure

An immediate consultation between Dr. E. Farrow, Dr. R. K. Hollingsworth, my associate, and the writer, was held, and it was agreed that Dr. Hollingsworth should, at once, give a saline transfusion and amputate the child's body at the vulval orifice. The abdomen was prepared by the operating room nurse while the saline solution was entering the vein, this preliminary work being done in one operating room while another room was prepared for further work. As soon as the transfusion was patient was transferred to the second op- completed and the abdomen prepared the erating room, where the writer, assisted by Dr. Hollingsworth, Dr. Farrow and Dr. O. O. Jones, opened the abdominal cavity under local anesthesia, using one and two per cent novocain solution. An enormously distended uterus was found extending as high as the diaphragm. The uterus was packed off with hot towels and quickly incised. It was found filled with blood which was evacuated and the remains of the child rapidly removed. This concealed hemorrhage accounted for her pulseless condition. One c.c. of pituitrin was given just before the uterus was opened and good contraction was secured immediately after it was emptied. The uterus was then delivered and the intestines and entire area again packed off with wet, sterile towels. A rapid hysterectomy was then performed with very little loss of blood, the patient being given gas only while the hysterectomy was being done. For the repair of the abdomen the original novocain anesthesia persisted until complete closure was made. The pelvis was drained by one rubber tube through a stab wound. As soon as the patient was carried to her room she was given a transfusion of one pint of citrated blood taken from her sister. The effect of the blood transfusion was immediate and the patient rapidly came out of the shock.

Seven hours later at 11:15 P.M. the patient was given a second transfusion of sixteen ounces of normal saline solution. She was first catheterized one hour following the operation and seven ounces of urine secured. At 11:30, fifteen minutes after the saline transfusion, she was again catheterized with no results. At 9:00 A.M. the following morning five ounces of urine was secured by catheter and at 10:20 she received the third normal saline transfusion. At 5:00 P.M. she received a second blood transfusion, the blood being secured from her husband, but it was not until 6:30 A.M. of the second day that her kidneys really functioned satisfactorily, at which time sixteen ounces of urine was secured by catheter. She was given caffeine and sodium benzoate ampoules at regular intervals and tap water frequently, which she retained. Her kidneys continued to function satisfactorily following the catheterization on the morning of the second day. On the afternoon of the third day following the operation the patient developed a typical broncho-pneumonia, which ran its usual course for a period of ten to twelve days. With the exception of two or three stitch abscesses the operative wound healed satisfactorily. The patient left the hospital on January 30, at the expiration of twenty-three days confinement, in good condition, and her progress since that time has been entirely satisfactory. There were a number of large sloughs in the vaginal wall due to the long continued pressure of the child's body. The two portions of the child when assembled weighed sixteen pounds.

CONCLUSIONS

1. Craniotomy with its technical difficulties and shock to the mother would probably have resulted in immediate death, or in death from puerperal septicemia later.

2. To have left the septic uterus after Caesarean Section would have had the same result.

3. The treatment of cases similar to my own by hysterectomy following Caesarean Section is the safest and most rational method of meeting these grave emergencies.

BIBLIOGRAPHY

Baldwin, J. F.: Caesarean Section with Hysterectomy in Case of Positive Infection. N. Y. Med. Jour., Aug. 23, 1913.

Hawks, E. M.: Maternal Mortality in 582 Abdominal Caesarean Sections. Am. Jour. Obst. & Gyn., St. Louis, 1929, xviii, 393-406.

Beck, Alfred C.: Two Flap Low Incision Caesarean Section. Surg. Gyn. Obst., Sept. 1921, xxxiii, 290-295.

Crowell, L. A.: Caesarean Section. South. Med. & Surg., 1928, xc, 676, 680.

Polak: Report of 2,000 Cases of Caesarean Section in North America.

Gordon, Chas. A.: Survey of Caesarean Section in the Burough of Brooklyn, City of New York. Am. Jour. of Obst. & Gyn., Sept. 1929, vol. xvi, No. 3, p. 307.

Montgomery, T. L.: The Morbidity and Mortality of Caesarean Section. Am. Jour. Obst. & Gyn., St. Louis, 1927, xiii, 610-617.

PUZZLING TYPES OF INDIGESTION*

By Walter C. Alvarez, M.D., Division of Medicine, The Mayo Clinic, Rochester, Minn.

ANYONE who sees many unusual cases of gastro-intestinal disease will, I think, be distressed at his inability to find labels for a considerable percentage of them. In some instances the label might be found if the patient could be observed and studied for a longer time, but in many others I feel sure that the fault is with the textbooks which have not yet supplied us with all the tags we need. Authorities are always conservative, and in spite of the fact that the surgeon with his exploring knife has upset many of our old the writers of books are inclined to go on ideas in regard to the causes of indigestion, describing the old diseases and more or less ignoring the new ones.

For a generation it has been known that the stomach is not the essential organ of digestion and that organic disease of its walls is rare, and yet, so great is the conservatism of publishers that they persist in labeling their textbooks on gastro-enterology with the old title of "Diseases of the Stomach". The commonest single cause of severe indigestion is probably disease of the gallbladder, but if one turns to a "System of Medicine" and looks for cholecystitis where one would expect to find it, in the volume on "Diseases of the Stomach", it will probably not be there. Why? Because in the old scheme of things the gallbladder belonged with the liver, and there it still is, treated in a more or less stepmotherly way. There one can find much about gallstones, but little, if anything, about the problems which daily confront the modern consultant. Where, except from his own experience and the perusal of contemporary journals, can he learn anything about the real significance of what the pathologist rather grudgingly calls "slight cholecystitis", or where can he learn something that will help him in handling the patients who after cholecystectomy continue to have colic or symptoms suggestive of biliary tract infection?

A Search for New Syndromes

Obviously, if we who are puzzled are ever going to get any new information we must dig it out for ourselves. We must study disease in our patients and not in our books. In the years in which I have practiced medicine, I have watched several new syndromes emerge from the group of so-called neuroses, and I see no reason why the process should not continue. Twenty-five years ago such troubles as duodenal ulcer, early cholecystitis, and chronic ulcerative colitis were rarely recognized; twenty-five years from now those of us who are still alive will be wondering how it was that in 1930 we could have failed to see that certain of our cases fell into definite groups, and that the symptoms of the patients were too severe to be accounted for on the basis of a neurosis.

Obviously, then, we must go looking for new diseases; but where? Explorers do not hunt for new land in the Mediterranean; they conserve their energies by hunting only about the Poles or in New Guinea or Tibet. Where should we be hunting? In the hope of throwing light on this question, I took from my files the records of 500 patients (227 men and 273 women) who in the latter half of 1925 in San Francisco consulted me in regard to indigestion or abdominal distress.

Difficulties in Classification

As soon as the records were read and abstracted, it became obvious that in many cases it would be impossible for anyone to make a single clear-cut diagnosis. It is comparatively easy to do this when all the complaints of the patient are clearly related to the presence of some serious lesion such as peptic ulcer or cholelithiasis, but how is one to classify the indigestion of a nervous, psychopathic woman with migraine, constipation, mucous colitis, urticaria, hypertension, gallstones, uterine fibromyomas, and a husband with whom she cannot live in peace. I am thinking of an actual case in which the first therapeutic experiment was the removal of the gallstones. As this produced only temporary improvement, the foods which were causing the urticaria and possibly some of the attacks of mucous colitis were next detected and eschewed. Again there was a little improvement, but the woman continued to be prostrated by severe attacks of headache, abdominal pain and vomiting. To make peace in the family the husband then left home, but this didn't help much. Finally as I came to know this woman, I saw that her troubles were due almost entirely to the severe migraine; the stones were impressive but apparently they had been silent and had had little to do with the case. I have therefore listed her record under the heading of migraine. The point I wish to make is that if I had lost track of the woman in the first few months after the operation when she and I thought it had cured her, I would have classified her case as one of cholelithiasis.

---

*Read before Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

Perhaps the strongest impression which I have gained from the study of these 500 case histories is that today the poverty of our knowledge in regard to the more unusual types of gastro-intestinal disease is due largely to the fact that we physicians so often see but one short episode in the course of a long continued chronic disease. Let us say that a woman has wakened at 2 o'clock with nausea, vomiting, and abdominal pain; a few days later the digestive tract appears by every test to be normal, so a few suggestions are made as to the diet, perhaps a little rest is prescribed, and the patient departs. Was it an attack of food poisoning or a manifestation of some serious disease? Six months later when another attack comes, this time with an accompaniment of jaundice, melena, blood in the urine, or choked discs, the patient goes perhaps to another physician and the first one is deprived of information which would teach him much.

For a number of reasons, then, the proper classification of many of the cases listed in table 1 is impossible. The grouping which I have attempted, although obviously imperfect, will, I think, be helpful in that it gives some idea of the extent of the problem which needs now to be attacked. The groups are made up of persons with: (1) definite disease of the gastro-intestinal tract; (2) symptoms suggesting such definite disease; (3) disease in organs outside the digestive tract; (4) generalized diseases; (5) nervous troubles and constitutional handicaps; and (6) poorly understood symptoms such as constipation, diarrhea, and flatulence.

DEFINITE DISEASE OF THE GASTRO-INTESTINAL TRACT

The first point to be noted is that a definite diagnosis of disease of the digestive tract was made in 175, or about one-third, of the cases. The commonest single cause of indigestion seemed to be cholecystitis, with or without stones. About half of the 77 patients were operated on and the diagnosis confirmed by the discovery of definite disease in the gallbladder.

The next most frequent cause of trouble was duodenal ulcer, and after this the next was subacute or chronic appendicitis. The diagnosis of appendicitis was made conservatively and in almost every case the criteria were first, that the patient had had typical or fairly typical attacks, and second, that if operation was performed recovery was definite and lasting. As will be noted, gastric ulcer and gastric carcinoma were rarely encountered.

I have included in this group of patients with organic disease four cases of infestation with Entameba dysenteriae and two of heavy infestation with Giardia lamblia. Such parasites can often be found in the stools of patients, but my impression is that in most cases they have little if anything to do with the production of the symptoms complained of. Hopefully, one prescribes the appropriate drugs, the cysts disappear, but too often the patient returns with the same old troubles.

Two cases listed in table 1 under the title of chronic mesenteric lymph-node disease interest me greatly because I believe they represent one of the new syndromes which I now want to see studied. The subject has recently been discussed by Freeman. The symptoms in a number of my cases were nausea and diarrhea, with abdominal soreness, sometimes fever, and usually much prostration and nervousness.

There is another condition to which I would like to call attention and this is an inflammation and widening of the anal ring. Among the 500 cases there were three in which I deemed this to be the basis for abdominal discomfort, constipation and flatulence. Certain it is that as soon as a proctologist cleared up the inflamed crypts, fissures, and small fistulas, the symptoms all disappeared and the bowels moved normally again.

There were two interesting cases in which cholecystitis was probably part of a generalized infection with some organism of low virulence. In one there was fever and arthritis which lasted for two years. Some features suggested tuberculosis, but its presence could not be demonstrated. In the other patient the organism was a streptococcus of viridans type which, during the course of years, invaded one organ of the body after another. I believe that many of the curious abdominal troubles that are associated with tenderness of the liver, symptoms suggesting cholecystitis, occasional slight rises in temperature, and sometimes arthritis, are due to smouldering generalized infection with organisms of low virulence.

Patients With Symptoms Suggesting Organic Disease

This group is to me the most interesting of all because it is the one in which research is most needed. It comprised 115 patients or over one-fifth of the total number. Many were incapacitated or were suffering so much that the trouble could hardly be ascribed to nervousness. In sixty cases the clinical picture resembled that of cholecystitis, but for a number of reasons the diagnosis remained in doubt. In some, important symptoms were lacking, or the patient was so querulous or so self-contradictory that the history could not be taken at face value. In others the gallbladder concentrated well with the dye test, or at operation the organ did not appear to be diseased. In a few the gallbladder was thought at operation to be diseased and was removed, but later doubt crept in because the patient failed to improve.

These cases in which after operation on the gallbladder the patient continues to suffer with the old symptoms of bloating, colic and perhaps even jaundice, are very trying to the clinician. If stones were found at the operation, or if the gallbladder was only drained, it often pays to operate again to look for more stones or to remove the gallbladder, but if the organ never contained stones, if it was removed, or if there is no jaundice, there is little to be hoped for from another laparotomy.

In many of these cases it seems to me that the symptoms must be due to the persistence or recurrence of infection throughout the biliary ducts, and a tendency to spasm in various parts of the digestive tract. So far as I know, no one has as yet offered any explanation for the troublesome flatulence complained of by these patients. Many of them doubtless continue to suffer because they are neurotic, or because they are handicapped by hypertension, migraine, or the nervous upsets that attend the menopause.

The diagnosis of peptic ulcer is not always easy. In eight cases the roentgenologist saw a defect in the duodenum, but the symptoms were either indefinite or they failed to respond to the usual treatment for ulcer. In a clear-cut case everything points the same way: symptoms, high acids, cap defect, relief with two hourly feedings, lesion at operation, and cure after gastroenterostomy, but in the puzzling cases there are strange contradictions in the evidence. Thus, in one instance the symptoms were characteristic of ulcer, the roentgenologist saw a defect in the outline of the gastric shadow, and at operation the surgeon felt a thickened area, which he excised. The pathologist, however, could not in the tissue which he received find any ulcer, and the patient continued for years to suffer with hunger pain.

Eight persons suffered pain and distress in the region of the appendix, but again I could not always be sure of the diagnosis, even when operation brought relief. The difficulty was that I soon lost track of the patient, and a cure lasting a few months failed to impress me. It is what happens afterward that is important.

There were sixteen patients in whom the only diagnosis possible was the meaningless one of abdominal pain. Perhaps in some of them a real diagnosis could have been made if I had been able to observe the patient long enough, or if I could have seen an acute attack.

A troublesome group of cases is that in which after appendectomy the patients continue to complain of pain and distress in the right lower quadrant. In some of them I suspect that the trouble is due to a persistence of low grade infection either in the walls of the ileum and cecum or in the lymph nodes draining this region. A few of these patients have a sort of hunger pain which occasionally is relieved by food, perhaps because eating helps the terminal ileum to force its contents past a spasmodically contracted ileocecal sphincter.

In one such case, in which the patient had for several years been incapacitated by pain and vomiting, and in which, on roentgen-ray examination, I found marked ileal stasis and some gastric stasis, Dr. C. H. Mayo short-circuited the ileocecal sphincter by making a new opening between the ileum and the ascending colon, and obtained a perfect and lasting result. Spasm of the ileocecal sphincter probably serves as the basis for at least one of the syndromes which some day will be recognized and dignified with names.

I have placed in this group of puzzling cases those with diverticulitis of the colon because although it is easy to demonstrate diverticula it is not always so easy to say that inflammation is present in some of them and that this inflammation is responsible for the symptoms complained of. I have seen cases in which the discovery of harmless diverticula so fully satisfied the clinician that he failed to look further and thus missed the really important lesion in gallbladder or stomach.

There are a number of cases in which I strongly suspect that the indigestion of later life is a sequel of peritonitis in childhood or youth: peritonitis which left adhesions and foci of minor resistance.

I suspect that there are cases in which early cirrhosis or other disease of the liver, with resultant disturbances of the portal circulation, must produce indigestion and abdominal distress, but as yet the syndrome has not been recognized. Probably, in most cases, if any diagnosis is made, it is that of cholecystitis.

I have listed two cases under the heading of gastritis or enteritis, but I have placed a question mark after these diagnoses because if a necropsy could have been performed it might have been impossible to demonstrate changes in the mucosa. One case was that of a woman who was well until she ate some sandwiches at a picnic. Shortly afterward she suffered with intense pain in the epigastrium, with a burning feeling there, and globus. In the weeks that followed she lost 22 pounds in weight. In the other case a similar upset followed an attack of "influenza."

I have seen a number of patients in whom after an acute attack of "food poisoning", or more probably of infection of the digestive tract with pathogenic organisms, symptoms of indigestion continued for weeks and months until the amount and quality of the food was restricted and the digestive tract was given a rest. Recent studies by Childrey at The Mayo Clinic have shown that if the intestine is overburdened and overwhelmed on one day it will not digest well on the next. Under such conditions a vicious circle may easily be started and maintained unless, for a few days, the work of the bowel is made easy.

DISEASE IN ORGANS OUTSIDE THE DIGESTIVE TRACT

In four cases the abdominal pain complained of appeared to be due to arthritis of the spine, with involvement of nerve roots. Such spondylitis, with a history of previous lumbago, wry neck, or sciatica, was encountered in twenty-four other cases but in them the relation of the disease to the abdominal discomfort was not so clear.

In many of the women it seemed to me highly probable that the tendency to indigestion was related in some way to the presence of defective ovaries, old pelvic inflammation, retroversion of the uterus, or uterine fibromyomas. I have always had the impression that there is a relation between cholecystitis and pelvic disease, but it would take a careful statistical analysis of necropsy records to prove it. Of one thing I am certain, and this is that it will repay the gastro-enterologist to consult frequently with a good gynecologist.

In one case a puzzling pain in the hypogastrium, which had been ascribed by several physicians to diverticulitis, inguinal hernia, and appendicitis, was relieved as soon as a posterior urethritis was discovered and treated. In another case the distress which had been thought to be digestive in origin was relieved by the removal of a large prostate.

Some physicians may be surprised to find that I have listed only two cases in which the cause for the indigestion was assumed to be dental infection. In many instances I suspected that severe pyorrhea was an important factor, but other causes for the symptoms could always be found, and doubt remained in my mind. In one case the indigestion and nervous breakdown of a husky farmer was traced to osteomyelitis in the mandible; in the other the patient, a big lumberjack, had for several months been going from physician to physician seeking in vain for relief of symptoms which suggested the presence of peptic ulcer. No one had been able to demonstrate such a lesion, and the usual Sippy treatment did not give relief. On general principles I had two badly decayed molars removed, and to my surprise the man returned in a few days to say that his symptoms were gone, his strength had returned, and he was off to the mountains again.

Generalized Diseases

In twenty-six cases it seemed to me that the complaints of the patient could best be accounted for by the presence of hypertension. I do not mean that hypertension ordinarily produces indigestion; often in the most severe forms it does not, but occasionally it causes the victims to seek the advice of a gastro-enterologist because anginoid pain, extrasystoles, paroxysmal tachycardia or the distress occasioned by a failing heart, are thought to be due to the accumulation of gas in the stomach.

A number of elderly patients who for some time had been treated for indigestion, but who really had a failing heart, were miraculously cured as soon as I induced them to move away from San Francisco's steep hills. In elderly persons with hypertension attacks of dizziness with nausea and even vomiting must often be due to slight thrombosis or transitory spasmodic closure of small blood vessels in the brain. I have seen physicians make a diagnosis of "acute indigestion" when a little examination of the patient would have revealed a slight hemiplegia or a slight bulbar paralysis.

It would seem that some of the indigestion and flatulence of persons with arteriosclerosis and hypertension must be due to disturbances in the blood supply to the bowel and to other abdominal organs, but as yet I know of no way of telling when such disturbances are present and responsible for the symptoms complained of. Research along these lines should be profitable.

In four of the 500 cases the cause of the indigestion was an unrecognized pulmonary tuberculosis. In three there was hyperthyroidism, and in one myxedema. In one case the subsequent history showed that I had been dealing with the beginning stages of a rapidly fatal leukemia, and in another I strongly suspected that I was face to face with the early symptoms of pernicious anemia. In still another I feared that I was dealing with some lesion of the suprarenal glands.

Nervous Troubles and Constitutional Handicaps

In thirty cases I have used as a diagnosis the term "fatigue neurosis." It is fairly satisfactory in that it brings to mind the picture of a man or woman who has broken down under the strain of overwork, long hours, heavy responsibility, no vacations, and perhaps insomnia. It is unfortunate that nowadays so many of these patients, instead of being given the rest which they so sadly need, are driven "over the edge" into a nervous breakdown by ill-advised operations for the removal of teeth, tonsils, or appendix. Even when definitely indicated such operations should, I think, always be deferred until the patient has had a chance to rest.

When there is no history of overwork and yet the patient is obviously hypersensitive, apprehensive and on edge, I use the term "nervousness." Many persons resent this word because they think it implies that they are excitable, flighty, foolish, or in some way culpable. They forget that a person who is outwardly calm may be inwardly seething, tense, and frightened.

I have coined the term "temperamental indigestion" to describe the troubles of certain men and women, often of one of the Mediterranean races, who get along well enough until some annoyance sets them off into an emotional debauch. The term "anxiety neurosis" is useful to describe those cases in which, after the sudden death from cancer of a relative or friend, or after a visit to a pessimistic or tactless physician, or after the appearance of symptoms which are thought to be due to the return of an old well-treated syphilis, the patient becomes terror-stricken.

I usually place in a special category those persons who are living under terrible strain and who are eating their meals to the accompaniment of bitter words. Perhaps the wife is insanely jealous, or the husband has been untrue and a divorce is pending, but whatever the reason, there is little that the physician can do until peace is restored.

I believe there should be a separate classification for the women who vomit or regurgitate immediately after meals. The problem is not one of indigestion because the food which is retained is handled comfortably, and operations on the stomach or bowel are worse than useless.

In table 1, I have grouped together those persons who seemed to me to be psychopathic, "constitutionally inferior", asthenic, or deficient in ovarian function. Gastroenterologists would do well to remember that for every insane person confined in an asylum there are several queer, poorly adjusted relatives at large, and many of these complain of indigestion, "auto-intoxication," depression or weakness, which is out of all proportion to the amount of physical abnormality that can be found. In these cases the physician will do well to focus his attention on the weakness and the inability to stand up to the strain of life and not on the aches and pains in the abdomen.

I think the term "constitutional inferiority" is a useful one with which to picture the thin, nervous, flabby, weak-backed, poorly sexed girl, who, if she had been born a kitten or a puppy, would not long have escaped drowning. Some "asthenics" could doubtless be placed in this group but I reserve for them a less opprobrious term because so many, though physically handicapped, drive onward with such keen, active, idealistic brains that they succeed in doing much of the constructive work of the world. I have never been able to decide whether they are tired because they were originally endowed with too little strength, or simply because they spend what they have so recklessly in an effort to do three men's work in a day.

I place in a separate group those women who show a masculine type of distribution of hair on face, breasts, and abdomen, and who have defective pelvic organs, painful and scanty menstruation, and sexual anesthesia. For the sake of brevity I continue to label this polyglandular defect with the term "hpyo-ovarianism". Many of them suffer with nervous indigestion, mucous colitis, and constipation.

Years ago I would have classified a number of the thin, congenitally handicapped patients as victims of enteroptosis, but now that I know how commonly this condition is found in healthy persons, I doubt the wisdom of ascribing symptoms to it. Some persons doubtless feel better while wearing an abdominal support, but this does not convince me that enteroptosis is a disease. The good which these women often derive from a sojourn in a sanitarium is due probably not so much to the fat which they put on as to the rest which they get. I think

I would as willingly ascribe symptoms to a large navel, to a hooked nose, or to flaring ears, as to a mobile cecum or to a redundant sigmoid flexure.

I fear that many physicians do not yet know the danger of operating on patients with severe migraine. The attacks of nausea, vomiting, prostration, and severe abdominal pain may strongly suggest the presence of cholecystitis, but the expert will continue to question the patient until he is sure that there is never any indigestion between attacks, and never an attack without headache. If the cerebral disturbance always comes first he will know that operations must not be done. I have seen patients with this disease who have submitted cheerfully to one useless operation after another; usually first appendectomy, then cholecystectomy, then gastro-enterostomy, and finally the taking down of the gastro-enterostomy. Surgeons must learn that in these cases it is useless to open the abdomen because the disease is not there. It is probably up in the brain from whence there spreads out down the vagi or splanchnics a nervous "storm" similar to that which produces the abdominal crises of tabes. Even when gallstones are found their removal may have no effect on the course of the disease.

Mucous colitis is another condition which accounts for much unnecessary opening of the abdomen. At operation I have looked at the colon in some of these patients; I have sectioned it, and studied the slides under the microscope, and I have been unable to find anything wrong. I have seen the surgeon remove half of the colon and cure the constipation which was thought to be the cause of the mucous colitis, and still the patient continued to lie on a couch with a hot water bottle over the place where the cecum used to be.

It seems to me obvious that the disease is not a true colitis. There exists first a congenital predisposition; second, a hypersensitiveness to many types of stimuli; and third, perhaps some local source of irritation such as pelvic disease in women. Research is much needed in order to learn what happens to intestinal secretion and absorption during an attack.

In some cases, perhaps in many more than we now suspect, abdominal distress is due to hypersensitiveness of the colon to certain foods, or perhaps to substances which are excreted through its wall. Spectacular cures can sometimes be obtained when the offending foods are detected and avoided, and in a few cases I have even seen severe headaches disappear.

The difficulty in recognizing these cases of so-called "intestinal allergy" is increased by the fact that urticaria is not always a part of the clinical picture. The points that should arouse suspicion in the mind of the medical attendant are that the patient, or one or more of his or her relatives are subject to hay fever, asthma, or eczema, and that the attacks of abdominal distress are associated with irritability of the bladder, with pain in the muscles and joints, and perhaps with hives and headache.

I do not like the way in which many physicians now apply the term colitis to every case of spastic constipation in which the haustration of the colon is a little irregular. I think the term should be reserved for those cases in which, with the sigmoidoscope, one can see that the mucous membrane is definitely inflamed or ulcerated.

Symptomatic Diagnoses

In nineteen cases the only diagnosis made was constipation. There are many patients in whom flatulence and indigestion can be relieved if only the lower end of the colon can be emptied without insult to the rest of the bowel. When the colon is highly sensitive, purgatives and rough diets are equally injurious, and often then the best solution of the problem can be found through the use of enemas of warm physiologic saline solution.

I dislike the usual textbook division of constipation into spastic and atonic varieties because I doubt if there is any basis for it in fact. I think it more helpful to divide the cases into: (1) those due to nervous strain; (2) those in which the stasis is rectal; (3) those in which there is stagnation in a large cecum; (4) those in which the cause is probably cholecystitis, pyloric obstruction, or chronic appendicitis; (5) those in which the food is insufficient in amount or in residue; (6) those in which there is disease about the anus or in the pelvis; (7) those in which the disturbance is due largely to neglect of the calls of nature; and (8) those in which it is due to carcinoma of the bowel or to diverticulitis.

There were thirty-six cases of diarrhea. As Cabot long ago pointed out, it is seldom that one can, even with the help of all modern diagnostic methods, hazard an explanation as to the cause of diarrhea. When ova and cysts of pathogenic organisms cannot be found, when gastric acidity is up to standard, when the bacterial flora is within limits of normal, and the colonic mucosa unbroken, what is one to say?

I have classified one patient as an air-swallower because he was so unusually good at it, but when I fitted this tag to him my responsibility did not cease; I had still to explain why he wanted to belch, and why he kept up this fatiguing practice hour after hour. In many cases it is a tic or habit spasm dependent on exaggerated reflexes which are mediated by a hypersensitive, tired, over-worked brain and cord, but in others the cause is to be found in a diseased gallbladder which upsets the normal rhythm of the gastric waves, or in a hypertension with its attendant failing heart.

The last case on the list was an interesting one. It was that of a very tall, thin, young woman, who had learned the trick of noisily swishing water and air from one end of her long stomach to the other. When it was pointed out to her that this was not a disease but only an accomplishment of doubtful social value, she lost interest in it.

MINOR DIAGNOSES AND INTERESTING SYMPTOMS

It will be remembered that as I abstracted the records of the 500 cases I made note in each instance not only of what I considered to be the principal diagnosis but also of other less important ones, and even of some of the outstanding symptoms. When these were listed the resulting table was so large that I thought it best to abridge it and present here only the more important and interesting items.

That the clinician should have a thorough understanding of cholecystitis and all its attendant problems will be seen from the fact that this condition was diagnosed definitely in eighty cases and its presence was suspected in ninety-five more. The tremendous importance of nervousness in gastro-enterological practice can be seen from the fact that in at least 109 cases it had to be considered as a factor in the causation of the patient's illness. Hypertension is another important condition. It was considered to be the most important one in twenty-six cases, but it was pronounced enough to be mentioned in another sixty. Disorders of the heart were found in thirty-one. Diarrhea was mentioned in the histories of seventy-two patients. Seventeen persons had a somewhat lowered basal metabolic rate, and one was definitely hypothyroid.

Duodenal stasis was noted in four cases, but in none of them was it considered pathogenic. Diverticula of the duodenum were found occasionally, but in none of the cases did the condition appear to be responsible for symptoms.

I was puzzled by four women who complained of a disturbance in the sense of taste. In some it was salty, and in others it was acid or bitter. In some the disturbance was unilateral, but what it was and how to cure it I never could learn. I read widely, but found nothing that gave me light.

CONCLUSIONS

It should be obvious from this study that further research is needed, particularly in the group of cases in which the symptoms are severe enough to suggest the presence of organic disease of the digestive tract, but in which the nervousness of the patient, the way in which the history varies with repeated telling, the absence of certain important features, the absence of roentgenologic signs of disease, and perhaps the inability of the surgeon to find anything wrong at operation, makes a satisfying diagnosis impossible. In some of these cases the symptoms may be due to definite disease in the brain, in the cord, in the nerves supplying the viscera, or in the blood vessels going to them.

There is no question that disease of the brain and cord can simulate acute cholecystitis or appendicitis. Supposed pathologic changes have been found in the nerves and ganglions connected with the digestive tract but it is so difficult to stain nervous tissue and then to interpret what is found that I do not know what value to put on the reports so far available.

Some of the necessary advance in knowledge will probably come through better follow-up studies of patients with strange symptoms; others will come when we have a better understanding of the physiology and bacteriology of the bowel, and others will come through more careful and minute studies of the tissues obtained at necropsy.

I think it should be obvious also from this study that no one can be a good gastroenterologist until he has first become a good clinician with a wide knowledge of disease of every kind, in every part of the body.

SUMMARY

This paper represents an analysis of the diagnoses made in 500 cases of indigestion or abdominal discomfort. The study was made with the idea of mapping out the areas in which clinical research is most needed.

In 175, or in one out of three cases, there was organic disease of the digestive tract. In fifty-two cases the cause for the symptoms was found in organic disease outside the digestive tract. In ninety-five cases the patients were congenitally handicapped or nervous and the symptoms seemed obviously to be functional in origin.

The most puzzling group was made up of 115 cases in which the symptoms were so severe as to suggest the presence of organic disease. The syndrome often resembled that of cholecystitis, but frequently it suggested the presence of ulcer or appendicitis.

Cholecystitis is the most common single cause for severe indigestion. Organic disease of the stomach is rare; it was found in only twelve cases.

Among the subjects considered in the paper are: the significance of infestation with intestinal parasites, chronic enlargement of the mesenteric lymph-nodes, inflammation of the anal ring, mild recurring septicemia, spondylitis, pelvic diseases of women, migraine, mucous colitis, nervous vomiting, intestinal allergy, constipation, and diarrhea.

BIBLIOGRAPHY

Freeman, Leonard: Chronic, Non-Specific Enlargement of the Mesenteric Lymph-Nodes, as Related to Surgery. Ann. Surg., 1929, xc., 618-630.

TABLE 1

PRINCIPAL DIAGNOSES MADE IN 500 CASES

Definite Disease in the Digestive Tract

	Cases
Cholecystitis and cholelithiasis	77
Duodenal ulcer	42
Appendicitis, subacute and chronic	17
Gastric ulcer	6
Carcinoma of the stomach	2
Fibromyoma of the pylorus	1
Hernia of the diaphragm	1
Carcinoma of the pancreas	2
Carcinoma of the colon	1
Carcinoma of the rectum	1
Recurrent intestinal obstruction	3
Chronic ulcerative colitis	4
Malfunctioning gastro-enterostomy	1
Pyloric obstruction, cause not determined	1
Septicemia with cholecystitis	2
Trauma to the abdomen (blows and strains)	2
Chronic mesenteric node disease	2
Infection with giardia	2
Infection with ameba dysenteriae	4
Inflamed anal ring	3
Rectal prolapse	1
	175

Suspected Organic Disease of the Digestive Tract

Syndrome suggesting cholecystitis	60
Syndrome suggesting peptic ulcer	13
Syndrome suggesting appendicitis	8
Gastritis or enteritis	2
Tuberculosis of the cecum	1
Post-cholecystectomy disease	4
Post-appendectomy disease	4
Abdominal pain, cause unknown	16
Cirrhosis of the liver	1
Diverticulitis of the colon	5
Sequelæ of old peritonitis	1
	115

Organic Disease Outside the Digestive Tract

Pyosalpinx	1
Posterior urethritis	1
Prostatitis with urinary retension	1
Pyelitis	2
Arthritis of the spine	4
Osteomyelitis of the jaw	1
Dental infection	1
Carcinoma of the lung?	1
Gonorrhea (one man and one woman)	2
	14

General Disease

Hypertension	26
Failing heart	1
Pulmonary tuberculosis	4
Hyperthyroidism	3
Myxedema	1
Leukemia	1
Pernicious anemia	1
Familial jaundice	1
	38

Functional and Indefinite

Fatigue neurosis	30
Nervousness	7
Marital infelicity	2
Temperamental indigestion	1
Nervous vomiting	2
Hysteria	1
Psychopathy	9
Constitutional inferiority	6
Asthenia	2
Hypo-ovarian	2
Migraine	12
Mucous colitis	7
Sensitive colon	1
Allergy	13
Constipation	19
Alternating constipation and diarrhea	1
Flatulence	5
Diarrhea	36
Aerophagy	1
Gastric boborygmus	1
	158

TABLE 2

Principal and Minor Diagnoses Taken Together*

	Cases
Cholecystitis	69
Cholelithiasis	11
Duodenal ulcer	43
Gastric ulcer	5
Appendicitis	33
Cholecystitis suspected	90
Cholelithiasis suspected	5
Duodenal ulcer suspected	22
Ulcer suspected	9
Gastric ulcer suspected	2
Appendicitis suspected	24
Post-appendectomy pain	6
Duodenal stasis	4
Diverticulum of the duodenum	3
Allergy	26
Allergy suspected	5
Amebiasis	12
Ameba coli infection	7
Inflamed anal ring	10
Calcified nodes in the abdomen	9
Pelvic disease in women	43
Menopausal upset	6
Fibromyoma of the uterus	30
Hypo-ovarianism	20
Nasal sinusitis	5
Tabagism	3
Pulmonary tuberculosis (active or healed)	10
Tuberculosis suspected	5
Hypertension	88
Heart disturbances	27
Paroxysmal tachycardia	4
Hypothyroidism, usually moderate	18
Migraine	25
Migraine questionable	5
Headache	11
Arthritis, cervical	3
Arthritis, spinal	23
Arthritis, generalized	9
Sciatica	2
Constipation	43
Diarrhea	72
Flatulence	16
Strange taste in mouth	4
Mucous colitis	8
Mucous colitis questionable	4
Nervous troubles	109
Nervous vomiting	4
Psychopathy	11
Asthenia	5
Constitutional inferiority	13

---

*A patient whose case was classified in Table 1 as one of cholelithiasis may have had in addition duodenal ulcer, hypertension, and pelvic disease. In Table 1 the case was listed under one heading; here it is listed under four.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

SEPTEMBER, 1930

EDITORIAL

THE INTERNATIONAL MEDICAL ASSEMBLY, OR THE INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

We take pleasure in reproducing here an invitation that has been extended to the medical profession of Tennessee to attend the ninth meeting of this organization. It will be noted that Dr. W. D. Haggard is its President this year.

"*To the Medical Profession of America*:

"The Inter-State Postgraduate Medical Association of North America extends a very cordial invitation to all physicians in good standing, to attend the International Assembly of the Association, to be held in the city of Minneapolis, Minnesota, October 20 to 24 (inclusive) 1930. The Program Committee has arranged an unusually interesting program, including all phases of Medicine and Surgery and the Specialties.

"In cooperation with the Hennepin County Medical Society, and with the active support of the Minnesota State Medical Association and surrounding County and State Societies, a most unusual opportunity for an intensive week of postgraduate medical education, conducted in many acknowledged leaders in the profession, is offered.

"WILLIAM D. HAGGARD, M.D.,
"*President*;
"WILLIAM B. PECK, M.D.,
"*Managing Director*;
"EDWIN HENES, JR., M.D.,
"*Executive Secretary*."

Space will not permit us to reproduce the program. It is suffice to say that eighty-nine of the leading men in the country appear on the program.

The program consists of clinical lectures and practical papers. It covers the entire field of medicine and surgery. The proceedings are published in one beautifully bound volume which makes an excellent reference book. Those who are interested can obtain full information by writing the headquarters at Freeport, Illinois.

MEDICAL ETHICS

Inquiries concerning questions of medical ethics arise with such frequency that is is deemed proper to discuss briefly some phase of this subject in each issue of the Journal for the next short while. Many of the inquiries relate to the matter of advertising. The following is taken from Section 4 of Chapter II of the Principles of Medical Ethics as now in force:

"Solicitation of patients by physicians as individuals, or collectively in groups, by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of disease; or to employ any methods to gain the attention of the public for the purpose of obtaining patients."

The above section is clear and explicit, and needs no discussion. Other phases will be discussed in later issues of the Journal.

DEATHS

DOCTORS PAY TRIBUTE TO DR. GUY R. JONES

Whereas, our Divine Father, in His infinite wisdom, has seen fit to call from our midst our beloved friend and colleague, Dr. Guy R. Jones; and

Whereas, his death has brought sorrow to his bereaved family and to us, his associates and fellow workers; and

Whereas, his cheerful disposition, happy temperament, and his loyalty to his duty and to his friends have endeared him to us;

Therefore, be it resolved, that the Robertson County Medical Society extend to his family our sincere and heartfelt sympathy;

And, be it further resolved, that a copy of these resolutions be spread upon the minutes of our society, a copy sent to the bereaved family and a copy furnished to local papers.

(Signed) JOHN S. FREEMAN,
R. D. MOORE,
W. F. FYKE.

MEMOIRS PASSED BY THE TRI-COUNTY MEDICAL SOCIETY AT ITS REGULAR MEETING, AUGUST 6, 1930

Dr. Wilmer Holland was born at Delphos, Dyer County, March 17th, 1885. He attended the Dyer County schools and completed his academic course at Dickson, Tennessee. He graduated in Medicine from the University of Tennessee in 1909 and located at Roellyn, Tenn., practicing his profession successfully for fifteen years. Dr. Holland married Miss Lucille McGavock in 1911 and five children were born to this union. In 1924 he took post-graduate course at Columbia, then moved to Dyersburg, Tenn., and practiced his profession up to the time of his death, June 8th, 1930.

Dr. Holland died from peritonitis resulting from perforation of duodenal ulcer. The death of Dr. Holland removes from our ranks one of its most worthy and honored members. He was a chivalrous, courteous gentleman and never in his relation with his professional brethren did he act unethically. Dr. Holland was ex-president of the Dyer County Medical Society; when the Tri-County Medical Society was organized he was made Secretary, in which capacity he was active and efficient, and was President of the Tri-County Society at the time of his death. He was quiet and retiring in disposition and had a heart full of sympathy for suffering humanity. None were too poor for his most careful and faithful attention. He was a beloved physician of both rich and poor, and it is with sad hearts that we members of the Tri-County Medical Society bear our testimony to his noble character and the loss which we feel in the loss of so valuable a member.

DR. N. S. WALKER,
Chm. Committee on Memoirs;
DR. E. S. HOPPER, *Vice-President;*
DR. E. H. BAIRD, *Secretary.*

NEWS NOTES AND COMMENTS

Dr. J. T. Hayes, of Nashville, is studying in Bellevue Hospital, New York.

Dr. Joseph Buford Pennybacker, University of Tennessee, 1926, has received the medical degree from Edinburgh.

Dr. Ralph Frazier, of Knoxville, has become house physician at the Etowah hospital.

The Oursler Clinic at Humboldt is being enlarged by the addition of six rooms for patients.

Only one of the 156 applicants for license to practice medicine in Tennessee failed to pass the examination.

Drs. H. W. Qualls, of Memphis, and J. H. Keeling, of Knoxville, have been reappointed on the State Board of Medical Examiners.

We have been notified of an examination for dietitian to serve with the U. S. Public Health and with the Veterans' Bureau. Those interested can obtain full information at the post office or custom house in any city.

Dr. Joseph R. Walker, of Rogersville, celebrated the 99th anniversary of his birth August 24th. Dr. Walker enjoys wonderfully well preserved faculties and fairly good health. He is universally honored as a leading citizen of his community.

At the recent meeting of the American Association for the Study of Goiter at Seattle, Washington, Dr. William F. Rienhoff, Jr., of Johns Hopkins University, Baltimore, Maryland, received the annual award of $300 for the best essay dealing with the goiter problem. Drs. O. P. Kimball, of Cleveland, Ohio, and E. P. and D. R. McCullagh, Cleveland Clinic Foundation, Cleveland, Ohio, and Robert P. Ball, of the University of Louisville, received honorable mention.

OUR ADVERTISERS

The advertising space in this Journal is worth what you and other physicians in this state make it. When you buy from the firms who patronize this Journal you not only protect yourself against questionable products but you increase the value of this Journal for its advertisers.

Not all desirable advertisers use space in this publication; but most of them will do so when they learn that the present patrons secure good results. This can only mean that unless you give preference in your buying to firms that now advertise here, you are merely helping to keep other desirable advertisers out. We earnestly urge you to cooperate with your publishers in always making your own State Journal the medical authority for reliable advertising. If you have not done so, begin now. When you are asked to buy medicinal or other goods the first question to ask yourself should be "Is it advertised in our State Journal?" If not, the advertising for good reasons may have been declined in order to protect you and you would do yourself and your Journal a kindness by declining to patronize them. Other desirable advertisers will use space in your Journal when you let their salesmen know the advertising pages of your State Journal are your guide.

Dr. W. D. Haggard delivered an oration on Surgery before the Wisconsin State Medical Society which met in Milwaukee September 9th. The subject of Dr. Haggard's address was "Diseases of the Gall Bladder and Ducts."

Dr. J. B. Parker was elected Register of Deeds for Knox County, August 14, 1930.

Dr. E. P. Nicely, of Nashville, has located in Knoxville and has offices in the Medical Arts Building.

A number of Montgomery County doctors attended the Christian County, Kentucky, meeting August 20th.

Dr. W. D. Haggard, of Nashville, spoke on "Diagnosis and Surgery of Ulcer and Cancer of the Stomach." Dr. J. N. Pritchell, of Louisville, talked on "Every Day Pediatrics."

MEDICAL SOCIETIES

Bedford County—Dr. J. W. Sutton spoke on "Colitis" and Dr. T. J. Coble opened the discussion at the meeting on August 21st.

Benton-Carroll-Henry-Weakley—On August 12th, Dr. W. F. Swink, of Memphis, spoke on "Peptic Ulcers" and Dr. L. W. Haskell, of Memphis, discussed "All Bladder Diseases."

Davidson County—Sept. 2nd: "Further Report of Use of B. C. G. Vaccine in Control of Tuberculosis," by Dr. John Overton. Discussion opened by Dr. William Litterer.

Sept. 9th: "Appendicitis From An Observation of 265 Cases," by Dr. M. B. Davis. Discussion opened by Dr. Richard Barr.

Sept. 16th: "A Clinical Study of Adhesive Pericorditis," by Dr. C. Sidney Burwell.

Gibson County—At the meeting on Sept. 29th, Dr. Jarrell Penn, of Memphis, will discuss "The Commoner Orthopedic Conditions" and Dr. G. W. Oliver, Medina, will speak on "Pernicious Vomiting of Pregnancy."

Hamilton County—August 14th: "The Role of Diet in the Treatment of Certain Diseases," by Dr. Fred E. Marsh.

August 21st: "Gonorrheal Arthritis," by Dr. John W. Bradley. Discussion opened by Dr. G. Victor Williams.

August 28th: "Induction of Labor," by Dr. J. C. Brooks. "Toxemias of Pregnancy," by Dr. Herman Renner. Discussion opened by Dr. George R. West.

September 4th: "Aspects of Low Back Pain, Report of Three Cases," by Dr. R. C. Robertson. Discussion opened by Dr. Chas. R. Thomas.

September 11th: "Eclampsia," by Dr. O. G. Hughes. Discussion opened by Dr. A. M. Patterson. "Marion Sims," by Dr. S. F. McIntosh.

Hardin, Lawrence, Lewis, Perry, Wayne Counties—A meeting was held in Hohenwald on August 27th. The following papers were read:

"The Early Correction of Crosseyed Deformatives," by Dr. Bruce P'Pool, Nashville. Discussed by Drs. G. N. Springer, J. P. Pickard, C. C. Stockard and W. E. Boyce.

"Workmen's Compensation Insurance and the Medical Aspect of Same," by Dr. O. H. Williams, Savannah. Discussed by Drs. H. C. Boyd, W. E. Turner, J. P. Keller, and T. J. Stockard.

"Undulant Fever," by Dr. J. P. Keller, Nashville. Discussed by Drs. T. A. McAmis and W. E. Boyce.

"Case Reports," by Dr. Watt Yeiser, Columbia. Discussed by T. J. Stockard, W. E. Turner, W. E. Boyce and J. H. Tilley.

There were twenty-one doctors present.

Knox County—August 5th: "Bronchiectasis," by Dr. H. L. Long.

August 12th: "Diagnosis of Cerebellar Disease With Report of Case," by Dr. R. B. Wood.

August 19th: "A Discussion on Asthma," by Dr. W. W. Potter.

August 26th: "When to Wait," by Dr. Wm. A. Boies.

Attendance this summer is the best in the history of the Society.

McMinn, Monroe, Loudon Counties—The all-day program of August 24th included lunch and the following papers:

"The Acute Abdomen," by Dr. W. E. Foree, Athens. Discussion led by Drs. Halbert Robinson, Loudon, and M. D. Shearer, of Tellico Plains.

"Determination of Pathogenic Tonsil," by Dr. Avery Leeper, of Lenoir City. Discussion led by Drs. R. C. Kimbrough, Madisonville, and D. P. Brendle, of Englewood.

"Cesarean Section," by Dr. P. E. Parker, Sweetwater. Discussion led by Drs. Frank Nichols, Etowah, and J. R. Watkins, Loudon.

"Carcinoma and Allied Conditions of the Uterus," by Dr. Herbert Acuff, of Knoxville.

Roane County—On August 19th, Dr. J. C. Fly, the County Health Officer, read a paper on "Intestinal Parasites." Case reports and discussions followed the paper.

Robertson County—On August 19th a meeting was held at Perry's Park. The following papers were read:

"The Value of An X-Ray Examination of the Chest," by Dr. E. E. Brown, Nashville.

"Some Reasons Why Tonsilectomy Is Not a Panacea," by Dr. F. E. Hasty, Nashville.

"Diarrheas in Infancy," by Dr. W. L. Gossett, Adairville, Kentucky.

BOOK REVIEWS

THE NEWER KNOWLEDGE OF NUTRITION: The Use of Foods for the Preservation of Vitality and Health. By E. V. McCollum, Ph.D., Sc.D., Professor of Chemical Hygiene in the School of Hygiene and Public Health, of the Johns Hopkins University, Balitmore, Md., and Nina Simmonds, Sc.D. Fourth Edition. Cloth. Price $5. Pp. 594, with illustrations. New York: Macmillan Company, 1929.

Any book that can go to the publication of the fourth edition has something in it worth while. To the students of nutrition the authors are well known among the pioneers in research work. Much of this book is devoted to an account of the development of the study of nutrition in the past three decades, a period marked by much progress in the subject. The work of Babcock, Hart, Steenbock, McCollum, Hopkins, Osborne, Mendel, and Funk is described, along with due mention of the contributions of others.

Considerable space is devoted to a discussion of the various vitamins and the diseases resulting from deficiencies of the vitamins in the diet of man. Abnormal skeletal development of children, and rickets are given two chapters. In the treatment of rickets it is stated: "It is so easy to do harm by excessive irradiation that ultraviolet lamps should be used only on the advice and under the supervision of a well qualified physician." The relation of Vitamin E to fertility and nutrition, the relation of diet and Vitamin G to pellagra, and iodine deficiency and goiter are interesting chapters.

The effect of foods in blood regeneration, diet of the nursing mother, dietary habits of man, the relation of diet to teeth, and the relation of diet to the resistance to disease are among the closing chapters of the book. An extensive bibliography is appended.

The various subjects treated are brought up to the date of publication, the work of all contributing to the development of each advance being given due mention. To the student of nutrition this is a most valuable book, and one that might be read with profit by all medical men.

—J. M. L.

SYMPTOMS OF VISCERAL DISEASE. By F. M. Pottenger, A.M., M.D., LL.D., F.A.C.P. Fourth Edition. Published by The C. V. Mosby Company, St. Louis, 1930. Price $7.50.

Those who have followed the different editions of this book will be delighted with another, which though following the same arrangement as the others, gives additional data in many chapters as well as supplying an entirely new one.

To those who have never read this book, I would say that any one chapter in the whole volume will repay its purchase. The neurologist, the clinician, or a chest specialist, will equally gain.

The first part of the work deals with the vegetative nervous system, its anatomy, physiology, and its relationship to the central nervous system.

The formation, function and antagonistic action of the sympathetic and para-sympathetic and new chapter on the pharmacologic differentiation between neurons of the sympathetic and para-sympathetic is of exceeding interest and should prove practical application. Another chapter deals with pharmacologic and clinical tests for sympathelicotonia and vagotonia.

Adrenalin, 1 mgm., subcutaneously may be used differentiating sympathicotonics from individuals with normal balance or who belong to the para-sympathicotontic group.

Ergotamin when injected has the opposite effect. Other tests that may be employed are Lowis Pupillary reflex, Sargent's white line, decmographia, Pende's or Ruggeri's test.

Tests for para-sympathicotonia include the pilocarpin tests, Eserine test, Histamin test, insulin test, atropin test, acetycholin and the oculocardic reflex.

Part two deals with the relationship between vegetative nervous system and the symptoms of Visceral disease. A somewhat different basis of classification of symptoms of disease is given and an explanation of the causes for variability of symptoms.

As a prelude to the study of viserogenic reflexes a chapter is devoted to segmentation of the body with accompanying illustrations, a knowledge of which is absolutely necessary to understand the different viscerogenic reflexes through either the sympathetic or para-sympathetic afferent fibers.

Part three deals with the innervation of the important viscera and the more important viscerogenic reflexes. A knowledge of these chapters will be of utmost aid to any physician and especially commendable are those chapters dealing with the chest, lungs and pleura. To that individual who has not read this book, the reviewer most heartily recommends it.

—R. B. W.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Clinical Observations on the Relation of Sodium Amytal to Vasomotor and Diuretic Phenomena After Oral Administration. Ludwig A. Emge, M.D., and P. E. Hoffman, M.D. San Francisco, California. American Journal of Surgery, July 1930.

The authors accept without comment the dramatic and highly hypnotic action of sodium amytal as stated by various observers. There is no particular value of the intravenous method over the oral except more rapid hypnosis and perhaps shorter duration.

After oral administration of 15 grains of sodium amytal and one-fourth grain of morphine within ten to twenty minutes, there is a fall in systolic pressure from a few to 40m.m. and the diastolic pressure falls from ten to twenty-five m.m. Towards the end of the hour the systolic pressure had risen 50 per cent or more of its primary drop, but the diastolic remained essentially the same. A secondary rise of blood pressure was noted during operative procedure.

Respiration was depressed and at times it was necessary to use stimulation. An alarming vasomotor collapse was noted in one instance. Severe mental confusion, visual disturbances, lack of orientation or restlessness was noted in one instance.

Their experiences with a combination of regional anesthesia, using novocain, has been very disappointing, as the two drugs are antagonistic. In obstetrics, while it gives the mother rest, there is a deleterious effect on the foetus, depressing the respiration and the vasomotor system.

Although fluid intake is increased after operation due to lack of nausea, there was an actual and relative lessened urinary output for about 48 hours. This was due more to the reluctance of the tissues in giving up fluid rather than to action on the glomerular apparatus. Barbital is entirely secreted by the kidneys. Secretion is slow due to a fixation of barbital in the nervous system and blood corpuscles.

Their conclusions are that sodium amytal, when the degree of hypnosis required depends upon a dosage which approaches 50 per cent of the minimal lethal dose for animals, when used solely for the purpose of preanesthetic hypnosis, while efficient, is not superior to other barbituric acid derivatives possessing greater safety margins.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Fungistatis in Ringworm of the Toes and of the Feet: Salicylic and Benzoic Acids. By Adrian G. Gould, M.D., and Edna K. Carter, R.N., Ithaca, N. Y. Archives of Dermatology and Syphilology. August 1930.

The authors have conducted a study of the fungistatic action of these combined acids on several common trichophytoses of the feet and toes. They also purpose to carry on similar studies with other therapeutic agents.

The medium used throughout this study was the "Pennsylvania" medium, consisting of the proper amounts of agar agar, American dextrose, Chaissaing peptone, and distilled water. Thirteen dilutions were used ranging from 1 to 60 salicylic and 1 to 30 benzoic acid to 1 to 10,000 salicylic and 1 to 5,000 benzoic acid.

Their conclusions were that the combined acids are strongly fungistatic for the three common trichophytons of ringworm of the feet and the toes.

INTERNAL MEDICINE

By R. B. Wood, M.D.
C. J. Carmichael, M.D.
Knoxville

Recent Viewpoint With Reference to the Treatment of Acidosis. By Victor E. Levine, M.D., Ph.D., in International Clinics, March 1930.

The author wisely states our treatment of acidosis has been in the past based on false ideas of the underlying cause. Reasoning from the fact, there was a clinical picture of acidosis or a reduction in the normal Ph., and that alkalies were a chemical antidote, these have been employed as a line of therapy, without taking into consideration other possible causative factors and regarding the decrease of hydrogenion concentration as an incidental affair which is not invariably present. Of more importance than a constant hydrogenion concentration is the maintenance of a normal osmotic pressure within the cells, and the increased urea of nephritis and the increased sugar in diabetes are nature's attempts at replacing the normal electrolytes which have been lost by disease.

No definite standard of normal alkali reserve can be set. That found in the inhabitant of high altitudes is about two-thirds that of those living at sea level. So it may be said a blood alkali of 40 is normal for one and 50 to 60 may be normal for the sailor.

The hydrogen-ion concentration is under chemical and physiological control and the P.H. is determined by the proportion of carbonic acid to sodium bicarbonate. The actual amounts of the two elements may fluctuate markedly and yet the ration or P.H. remain the same. The carbonic acid content of the plasma is determined by Henry's law relating to partial pressure and solubility. In other words, the greater the concentration of carbon dioxide in the alveolar air, the greater is the quantity of Co2 forced into solution in the blood to form carbonic acid. Acid base factors in the blood are held in equilibrium by removal of fixed acids through the kidneys and volatile acids through the lungs. The liver, stomach and intestines, along with metabolism, also play a part. Disturbance of function of important organs or of the heat regulating mechanism is readily reflected in the hydrogen-ion concentration of the blood as well as being influenced by water intake and output, and by base and acid forming foods ingested.

The volume of air breathed controls the concentration of Co2 in the alveolar air, which regulates the quantity of carbonic acid. The volume of air breathed in determined by the Co2 concentration, oxygen pressure and by the blood alkali. To maintain a normal P.H., a given amount of alkali in the blood needs a corresponding amount of Co2. The blood alkali then determines the alveolar Co2, which in its turn adjusts the pulmonary ventilation. So it is that analysis of alveolar Co2 and a determining of the blood alkali give the same information.

The oxygen pressure in the lungs and in the arterial blood holds a relation to blood alkali or to the concentration of bicarbonate, which is in the nature of a constant ratio. This ration is disturbed in changes of altitude, in disease of the heart and kidneys, diabetes, anaesthesia and asphyxiation.

Depressed breathing is the cause of a low P. H. and the immediate cause of a high P.H. is overbreathing. The author maintains that the term acidosis is confusing in that it may represent a clinical condition, a low P.H., low alkali bicarbonate or ketosis. Keeping in mind the foregoing discussion the writer then outlines suggested treatment of uncompensated acidosis in such acute emergencies as shock of anaesthesia, carbon monoxide poison, morphine poison, asphyxia of newborn, pneumonia and intoxication.

Alkalies do not compensate acidosis, there being a physiological side as well as a chemical.

Recently Discovered Endocrine Disease. By Russell M. Wilder, M.D., in International Clinics, March 1930, page 293.

The clinical picture of hypoactivity of the adrenals, the pancreas and the para-thyroid has been shown for some time, but the picture of hyperactivity of these glands is rather a new one. In fact, very few cases are yet on record of any of these diseases.

As is known the adrenal gland is morphologically of two distinct components. The medullary hormone is well known. Also, there have been reported precocious development of puberty in boys and masculine sex characteristics in girls where tumors of the cortex have been present. Whether these are the result of over-secretion of the cortex must wait the trial of a separated cortical hormone. There also have been reported cases of paroxysmal hypertension associated with tumors of chromaffin tissue. Other symptoms and signs present are suggestive of hyperadrenalism, such as attacks of palpitation, precordial distress, occipital headache, sense of choking, nausea and vomiting and cold, clammy extremities. Two cases with above symptomatology were found to have chromaffin tumors and symptoms were relieved by their removal.

The author gives credit to Seale Harris as being the first to suspect the syndrome of hyperinsulism. Proof came with the discovery of tumors of the islands, associated with hypoglycemia and the reduction of the mass of the pancreas in cases without tumor, or resection of the tumor resulting in suppression of such attacks as are clinically like those produced by over doses of insulin, such as faintness, tremor and blurred vision. Several such cases have been reported.

It has been demonstrated in dogs that ligation of the pancreatic duct results in over development of the islands and an increase tolerance for glucose. On this basis de Takats has ligated the duct in its mid-portion on two diabetic patients with low tolerance.

Two cases of low blood sugar and signs of hypeninsulism have been subjects to partial resection of the pancreas with slight relief. One of the cases operated was subject to violent attacks of delirium with the extreme hydoglycemia, and had been confined in a strait-jacket during his attacks, while another had been diagnosed as having "spell of psydhogenic origin."

Much of our information on the para-thyroids is due to Collips of Hanson and others, and development and para-thyroid extract.

Proof of the existence of spontaneous hyperparathyroidism rests on finding a high blood calcium, low blood phosphorous in cases of skeletal disease, with hypertrophy of or actual tumor of the para-thyroid glands the controls of these abnormalities of surgical removal of such tumors. The most striking clinical feature is the result of calcium on practically all the bones, but especially the pelvic girdle. Rarefaction differentiates it from Paget's disease. Bones are fibrous but not porous, and bone cysts may occur.

The complaints of the patients are pain and tenderness of the bones, especially at the site of the cysts. Loss of strength and reduction of muscles tone parallel each other. Flaccidity and reduced electric excitability are present with no loss of weight and appetite.

Following excision of the tumors the calcium begins to fall and tetany may develop within 48 to 72 hours. Clinical improvements follow, such as a gain in strength which parallels muscle strength. —R. B. W.

Epilepsy—Laboratory Studies—Felsen. Archives Internal Medicine, 1930, 46:180.

He summarizes his laboratory observations on seventy-three epileptic patients, which he studied for a period of approximately six years. His work is so extensive and thorough there would seem to be few, if any, remaining theories to be studied from the laboratory viewpoint. His effort to reconcile laboratory and clinical evidence has been most fair and while efforts to reconcile the two produced unsatisfactory conclusions, one is compelled to accept the facts. If any physician has a pet theory regarding the causation of epilepsy, let him read Dr. Felsen's article and then apply to his theory, the results here set forth. This study was extended to almost all laboratory procedures which could have any bearing upon the study of this disease. The gastric juice; the blood histologically and physiologically, including modern blood chemistry, the effect of salt-poor diet and wasserman, the urinary system, functional tests, albumin, casts, fractional studies, specific gravity, effect of NaCL, sugar tolerance. In addition a study of spinal fluid, sputum, feces, protein sensitization, cardiac function, blood pressure, basal metabolism, x-ray studies of skull, endocrines, teeth, and finally the vegetative nervous system. The mere enumeration of subjects studied gives one the impression that the work was undertaken with an open mind and no leaning to any theory.

The findings in this work have been compared with an equal number of control patients as near the same age and physical standard as possible. It is interesting to note that any variation in laboratory or clinical findings in the epileptic group show about the same percentage variation in the normal group. The article comments on the findings in the many experiments, but draws very few conclusions, usually that same variations are found in normal individuals. The research has been carried on with the epileptic at the time and immediately following the attack and also in the interim when he is nearest to normal. Two (2) points stand out to the reviewer in the summary: First, thirty-six of the seventy-three patients studied showed an increase of blood chlorides in the Interparoxysmal period. Second, a study of the vegetative nervous system showed that approximately one-half of the patients tested were either sympatheticotonic or vagotonic, thus revealing what the author termed a state of "Vegetative Instability."

Comments: "Chemical examination of blood in eleven patients immediately following seizures showed no changes other than those which might reasonably be ascribed to physical exertion."

A salt-poor diet failed to change the blood chemistry in any way except to reduce the chloride content.

Positive Wasserman was found in only three patients out of 73 studied.

Study of renal function showed that 14 patients out of 33 excreted less than 60 per cent of pthalein in two hours.

Sugar tolerance of 47 patients tested, only 15 excreted dextrose before the end of the two-hour period.

Spinal Fluid: Observations on spinal fluid were not specific, findings coincide with other groups of patients.

Protein Sensitization: Not a single clear cut reaction to any protein used.

Sputum: All studies were negative, hence tends to invalidate theory of bacterial etiology.

These few comments may serve to interest other medical readers in this article as they have the reviewer. Space forbids comments on the entire subject material. —C. J. C.

OBSTETRICS

By James R. Reinberger, M.D.
416 Medical Arts Bldg., Memphis

The Results of An Investigation and the Treatment of Streptococcal Puerperal Sepsis at the Toronto General Hospital. By W. A. Dafoe, M.D. Amer. Jour. Obs. & Gyn. August 1930.

The author concludes that a conservative estimate of maternal mortality in this country due to puerperal sepsis is about 30 per cent, and that 70 to 90 per cent of the fatal cases are due to the streptococcus hemolyticus. The investigation reported was carried from January 1927 until January 1929, and its object was an effort to find out just what part the streptococcus hemolyticus played in the incidents of infections, and the treatment of these cases. The study consisted of cervical cultures taken during the last two weeks of pregnancy, labor and pueriperium. All cultures were taken by swab directly from the cervix, and planted directly on sterile blood agar, incubated for twenty-four hours. If doubtful colonies were found, they were transplanted into glucose broth. Direct smears were also stained by the Grams method at the same time that the initial culture was being made, in that this would give them an earlier insight into the type of infection dealt with. The classification of organisms was that suggested by Schottmuller, i.e.: (1) Streptococcus hemolyticus; (2) Streptococcus anhemolyticus; (3) Streptococcus veridans. This cervical culture study resulted in the following ante-natal cultures, 7 positive hemolytic streptococci in 7 out of 500 cultures. Labor cultures with

14 positive hemolytic streptococci in 432 cultures. Post-partum cultures were positive in 52 out of 432 cultures. They also concluded that there was a seasonal variation, with an increase in the number of positive cultures more often during February, March, April and May.

A detailed study was made of every case in the puerperium whose temperature was 100° F. for twenty-four hours, with a complete examination of the respiratory, gastro-intestinal, cardio-vascular, genitourinary, with a complete blood and cervical culture studies. Those cases of puerperal infections showing a positive cervical swab for hemolytic streptococci were divided into three groups, with a division into two for the third group.

Group No. 1—Serious cases. A positive cervical smear for streptococcus hemolyticus and a temperature over 102° F. for twenty-four hours.

Group No. 2—A positive cervical smear and a temperature of 101° to 102° F. for twenty-four hours.

Group No. 3—(a) A positive cervical smear and a temperature of 100° to 101° F. for twenty-four hours. (b) Positive cervical smear and no elevation of temperature.

Likewise it was concluded that the pulse rate was comparatively much higher with this type of infection with relation to the temperature, and the scantiness of uterine discharge which maintained a characteristic chocolate colored serous appearance.

The treatment consisted in all prophylactic measures in the ante-natal state, and careful technique of the delivery room with the routine standardized treatment for the three groups, which consisted of: Group 1—Posteral drainage, heat to abdomen, Ergot and quinine by mouth with forced feeding and fluids, and plenty of sunshine. This was combined with repeated indirect transfusions, if there was an apparent enemia. Intravenous and intramuscular injection of scarlet fever antitoxin (30 to 45 cc.) was given every thirty-six hours. The same routine was applied to Group No. 2, and in Group No. 3 the usual treatment with the exception of indirect blood transfusions and serum was carried on.

Results: During the two years' study, there were 17 patients who were considered seriously ill (Group No. 1). Four of these patients had positive blood cultures showing streptococcus hemolyticus. There was one death. In Group No. 2 there were six cases all recovered. Mention is made of septic abortions that were treated.

The essential point of the whole question in the treatment of puerperal infection is that these measures should be begun as early as possible, and that the value of the scarlet fever antitoxin may act by being a nonspecific immunizing body or by producing antitoxic bodies, and certainly to be added to our usual remedial measures in caring for this type of infections.

The reviewer is very much pleased to see that thorough study is being made in a systematic way of puerperal infections, for he feels that at present little advancement has been made other than in its prevention. He personally studied and examined all puerperal infections on a large obstetrical service for three years, and concluded that with the exception of bacteremia and peritonitis, all of them recovered. However, he is not quite so sure that many of these end results cannot be prevented by the early diagnosis in the character of the infection, and the early institution of treatment either based on the serum of Lash and Kaplan, and the scarlet fever antitoxic serum used in the above paper, in that all other measures either singularly or combined have failed. With this type of work maybe a serum can be made to immunize all pregnant women before delivery.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Glaucoma and Glaucosan Drops. C. Hamburger. Brit. J. Ophth. April 1930.

The author points out the variety of operative procedures that have been devised for the cure of chronic glaucoma, and believes that this proves their unreliability. To prove the fallacy that a good technic guarantees success, he cites a few examples of unsuccessful operations by famous oculists. His treatment for glaucoma simplex consists of: (1) miotics; in case they suffice he gives nothing else; (2) drops of the epinephrine substitute glaucosan if the tension remains high, and (3) operation, as a rule only if these conservative measures fail.

A disadvantage of treatment with the epinephrine substitute glaucosan is the rise of tension that occasionally ensues. As a rule, this is temporary and the resulting tension is usually so much the lower. The best way of combating the rise is by the instillation of 0.5 per cent physostigmine and the injection of 10cc. of 10 per cent salt solution in the vein of the arm, and, if need be, by the subcutaneous injection of morphine. He commends Gifford's method of using physostigmine both before and after the epinephrine substitute glaucosan. The author treats only one eye on one day. He admits that the action of this drug is temporary, lasting for only days or weeks. The administration has only to be repeated.

The drug is especially valuable in secondary glaucoma following iritis. He states that he does not aspire to render glaucoma operations superfluous by means of the epinephrine substitute glaucosan.

Biomicroscopy of the Tarsal Conjunctiva in Trachoma. Cuenod and Nataf. Bull. Soc. Franc, d'Opht., 1929.

Cuenod and Nataf have made an extensive biomicroscopial study of the conjunctiva of the superior tarsus in all stages of trachoma. They conclude that this method reveals characteristic changes in the epithelium and blood vessels of the conjunctiva which are of definite importance. They also believe that the trachoma follicle presents an appearance under the slit-lamp which definitely distinguishes it from the various types of simple follicles. The value of this last observation in the diagnosis of the disease can be well understood when one considers that histologically the follicles are indistinguishable.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

Gonorrheal Spurs and Misnomer. By Wm. Von Lacum and Emilio J. Palomegue. Journal A. M. A. August 16, 1930.

The general belief that calcaneal spurs are practically always due to gonorrheal infection is not substantiated by this report based on 100 cases investigated. The authors call attention to the fact that his condition occurs usually in people who stand in their work; as barbers, dentists, motormen, policemen, etc. A certain percentage of exostosis are painless. Their summary and conclusions are as follows:

"Forty-four of 100 consecutive patients with calcaneal spurs gave a history of gonorrhea, and of these 40.8 per cent had definitely infected tonsils. Fifty-nine per cent had infected teeth and 22.2 per cent had definite prostatitis. Fifty-six patients did not give a history of gonorrhea; of these, 55.3 per cent had infected teeth, 20 per cent had infected tonsils and 12.5 per cent had definite prostatitis. Eight patients without gonorrhea and four patients with gonorrhea had ostearthritis of other joints. Syphilis so far as could be ascertained, was not an etiologic factor in any of the cases.

"A variety of etiologic factors for calcaneal spurs have been commented on by various observers. Some factors previously thought to be of primary importance do not seem to be significant in the etiology. Neither syphilis nor gonorrhea is a gross factor in the etiology of most cases of calcaneal spurs. Foci of infection in the teeth, tonsils or prostate gland and possibly other obscure areas, particularly those bearing streptococci, are probably a large factor in cases in which multiple etiologic factors are present. The term "Gonorrheal spurs" is a misnomer and should not be used."

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon, M.D.

Doctors' Building, Nashville

A Plea for More Conservatism in the Treatment of Nasal Accessory Sinus Infections. By William Wesley Carter, A.M., M.D., New York City. Annals of Otology, Rhinology and Laryngology, June 1930. Vol. xxxix, No. 2, page 579.

In no department of surgery has more ingenuity in the planning of operations been displayed than in that of the nasal accessory sinuses. In no field have physiologic considerations been more often ignored or subsidized to mechanical devices which have destroyed irreplacable tissues and have effected undesirable anatomic changes which could not be effaced. In addition the dangers attending radical sinus surgery are constant and unavoidable, and are not sufficiently stressed by writers upon this subject.

These operations are major procedures, and when the frontals, sphenoids or ethmoids, especially, are involved, the danger of meningitis is ever present.

Published statistics fall far short of giving a correct estimate of the seriousness of this danger. Some operations devised for the relief or cure of pansinusitis are marvels of ingenuity and are based upon accurate anatomic knowledge of the parts and true conception of the drainage problems. Some of the results of these procedures, however, show that enthusiasm to obtain mechanical perfection has resulted in destruction of much healthy tissue that might have been saved.

This tissue has a definite functional value which can never be fulfilled by the scar tissue which results from its removal. In all operations the dramatic, artistic and even the mechanical appeal must be subserved to the benefit of the patient. Clinical results, regardless of the artistic or mechanical merit, must always be the major object of our efforts.

What are the nasal accessory sinuses anyway? Disregarding minutia of detail, they are essentially air pockets connecting with the nose by means of tortuous ducts, or else ostia so placed as to oppose the laws of both by hydrostatics and gravity. When these sinuses become infected and their mucous membrances so thickened that they become closed cavities, as in acute conditions, our responsibility begins and our ingenuity, in giving relief, is called into play. In acute sinusitis operative measures are not to be considered, the danger of meningitis and pyaemia are too great. The urgency of symptoms in acute exacerbations of a chronic condition may necessitate surgical drainage, but no more radical procedure is permissible at this time.

When it comes to the radical surgical treatment of old chronic sinusitis, I have some sad admissions to make, and having seen some of the results secured by my most celebrated confreres, I feel that my song of lamentation could easily become a mighty chorus.

Many radical operations upon the frontal, the ethmoid, the sphenoid and even the maxillary sinuses done by men of unquestioned ability and adequate experience, leave scabbing, granulating areas, glistening and dry, or bathed in ever present offensive purulent debris that constitutes a menace to the health and happiness of the patient during his entire lifetime.

We speak with careless joy of having exenterated the ethmoid body, obliterating the frontal sinuses and of having converted the maxillary antrum into an alcove of the nasal cavity. But what of the aftermath? If we follow these patients for a long period after operation we are forced to conclude that very few are cured by extensive operations on the sinuses.

Bare bone does not regenerate its periosteum, nor does it remain alive. Destroyed ciliated epithelium is not regenerated. Normal mucous glands do not reappear in the scar tissue. In sinusitis, the sequence of events is the same as in inflammatory conditions elsewhere in the body. First, there is congestion, if this continues hyperplasis and hypertrophy, later degeneration and atrophy. Repeated attacks of inflammation result in thickening of the mucous membrane. In these chronic cases polypi will be frequently found in the antrum, and especially the ethmoid area. That polypoid degeneration has taken place does not constitute an indication for the ruthless removal of the mucous membrane leaving bare the bony walls of an infected cavity. The thickened membranes are the result, not the cause, of the nasal trouble. The cause is an irritant, usually an infection in the cavity which they line. The logical cure for the sinusitis is, therefore, the elimination of the irritant. This may be accomplished in the majority of instances by conservative operative measures if necessary for the promotion of drainage, by proper local treatment and by proper hygeine and medication in order to strengthen the vital resistance of the patient. Polypi should be removed, for they interfere with drainage, and this tissue is beyond any hope of restoration to normal. The simple removal is not curative. If possible, the underlying diseased bone or periosteum must be removed. The destructive operative procedures should not extend beyond the limits of diseased tissue. This limit is, however, not always easy to determine. It is better, however, to fall short of removal of all the dead bone, than to go too far and destroy mucous membrane capable of recovery after the underlying dead bony cell wall has sloughed away or been absorbed. There are some cases where one is forced to choose the radical operation as the lesser of two evils. These should be carefully culled from those which may be relieved by less severe methods. In many cases of long standing sinus trouble the author has found the following treatment satisfactory and advises that it, or some similar measure should be tried persistently before resorting to radical operation.

(1) Correct deflected septum, or any other condition interfering with drainage.

(2) Remove polypi and uncap the affected ethmoid cells.

(3) If the antrum is serving as a reservoir for pus, make a large permanent opening into the inferior meatus for drainage.

(4) Empty the sinuses, at least twice a week, by suction and apply 20 per cent Argyrol.

(5) Have the patient cleanse the nose daily with normal salt solution, and instill into each nostril five drops of 10 per cent solution of Argyrol.

(6) Necessary attention should be given to the patient's general health. This may, in some instances include climatic changes. Usually this treatment must be carried out for several months. The results have been far better than those following radical operations. No case of argyria has been seen following the continued use of argyrol in the nose.

It is, I sincerely believe, a fact that radical surgery of the sinuses rarely results in a complete cure. This conclusion has been reached by observation of my own clinical results, as well as those of other operators.

A rational conservatism should be more rigidly applied when dealing with infections of the sinuses.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Feeding of Premature Infants. Miner C. Hill, M.D., Amer. Jour. Dis. Children, July 1930.

In this study infants weighing less than five pounds at birth were treated as prematures. Maintenance of body heat, prevention of infection, nursing care, and feeding are the important factors in the care of premature infants. A room temperature of 75 to 80 degrees F. is desirable. Warm, fresh, moist air is the best. Wet sheets hung before the radiator or a pan of water kept simmering on an electric stove supply the necessary moisture. Respiratory infections are the greatest menace to prematures, they should be kept isolated from visitors; the nurse should wear a gauze mask while attending the infant.

Morning and night the baby is stripped and given gentle massage and passive exercise for three minutes.

Breast milk is the best food. For one year the premature babies admitted to Bellevue Hospital were fed 90 cc. breast milk reinforced by the addition of 30cc. evaporated milk. On this feeding the average gain in weight per day was .766 ounces. A similar number of premature infants fed varying formulae in the year previous to this study showed an average gain in weight per day of .336 ounces. Thus the group fed breast milk and evaporated milk showed an average daily gain in weight more than twice that of the control group.

The mortality rate in the two groups was about the same, all deaths being due to intercurrent respiratory infections.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Acute Pancreatitis. Eliason and North, Surgery, Gynecology and Obstetrics, August 1903. Vol. II, No. 2. pg. 187-189.

It is virtually unanimously conceded in this country that an immediate laparotomy is the proper procedure. Most European surgeons are in agreement. In Denmark, however, dissenting voices arise. Mikkelson has recently quoted Rovsing, Holst, and other Danes, as in favor of expectant treatment. They believe that operation is best deferred until the pancreatic symptoms subside unless diffuse peritonitis of abscess formation supervenes. Mikkelson reports the recovery of 50 consecutive cases treated either non-surgically or with deferred operation as compared with 66 per cent mortality following immediate operation. Among those who favor immediate intervention there is considered variance as to the type of procedure. Some favor a simple laparotomy with drainage of the greater peritoneal cavity. Others make a direct attack upon the pancreas. Still others confine their attention to the gall bladder and its ducts without any attempt to drain the pancreas itself. Some time a combination methods is utilized. Our custom has been to open the necrotic pockets in the pancreas, by means of either a blunt haemostatic forceps or a cautery. Soft cigarett drains are then introduced in coffer dam fashion. The tensely distended pancreas is thus decompressed and, at the same time, an exit is provided for the necrotic material. The question of coincident surgery upon the biliary tract has to be answered for dividual case. Although cholecystectomy may, in theory, be the procedure of choice, nevertheless, it is certainly unjustifiable in critically ill patients. Under such circumstances surgical drainage of the biliary tract must suffice until a later date.

Our predilection for immediate operation in acute pancreatitis has been in full accord with the common practice among surgeons. Nevertheless, an analysis of results in our own series of cases herewith reported awakens grave doubts as to the rationality of our position. There appears to be much which substantiates the Danish viewpoint upon deferred operation as previously described. Out of eight cases operated upon immediately (within 48 hours of onset of attack) six died. On the other hand, in another group of five cases in which, for one reason or another, operation was deferred to a later period, from the fourth to the ninth day of the disease, all of the patients recovered. In the first group due credit must preforce be given to the operative procedure in the two cases which survived; in two other patients justifiable indication existed for performing an emergency laparotomy. One had gangrene of the gall bladder. In the other an x-ray report of gas under the diaphragm led to a mistaken diagnosis of perforated ulcer. The x-ray appearance was later shown to be due to an anomalous position of the right lobe of the liver and the transverse colon. In the four remaining cases, operation, far from conferring any benefit upon the patient, appeared to hasten the exitus. Three were to ill to survive the shock of operation and one succumbed to secondary hemorrhage.

Immediate operation therefore gave a mortality of 80 per cent with no obvious benefit save in the two cases which recovered. Deferred operation was followed by recovery in each instance. Our series is completed by a single patient who died without operation within a few hours of his admission. In this small group of cases, the results were strikingly significant.

Few surgical procedures are associated with as varied an assortment of inherent complications as operations for acute pancreatitis. Secondary hemorrhage is common and is a manifestation of the natural haemorrhagic tendencies of the advanced stages of the lesion. Korte recorded an incidence of 21 per cent. In one of our patients whose pancreas at operation showed only oedema, intractable bleeding from the wound margins and from the pancreatic region began the day after operation and continued until death. The process is one of progressive erosion of blood vessel walls by tryptic digestion. No treatment appears to avail.

The syndrome described by Whipple and designated "pancreatic asthenia" occurs frequently. It is characterized by asthenia, progressive fall in blood pressure, anorexia, or capricious appetite, nausea, and loss of weight. The same complication is often observed with associated chronic pancreatitis. The feeding of pancreatic extract may be of value.

Defective wound healing due to the discharge of pancreatic secretions accounts directly for two common sequelae; namely, persistent sinus and ventral hernia. For the protection of the wound margins from tryptic digestion, we have used a paste composed of beef extract and zinc oxide ointment with satisfactory results.

The detection of any epigastric mass should arouse the suspicion of a residual abscess, or, if later in convalescence and not associated with fever, of pancreatic cyst. One of our cases developed an abscess in the tail of the pancreas. This was successfully drained by lumbar incision.

Recurrences are reported even after the most radical operations. Bailey records a case with fat necrosis, an oedematous purplish pancreas, and a non-calculous cholecystitis. Cholecystectomy was done. One year later the patient returned in extremis. The autopsy disclosed a typical haemorrhagic type of pancreatitis. We also had a case developing two years after cholecystectomy (case 9 in table). Love observed 28 cases over a period of one year and found that 16 of them had biliary colic similar to that experienced before operation. This return of colic may have been due to stones which were overlooked. In a case of Waring and Griffiths, the shorting of drains on the fifth and again on the tenth day was followed by abdominal pain and vomiting. One of our patients, case 10, improved after operation, but died following a recrudescence of symptoms on the fourth day. Autopsy showed an extension of the necrosis beyond the limits found at operation.

Diabetes might be anticipated as a sequela of a disease so destructive of pancreatic tissue. Strangely enough, it is rare. This may be due to the fact that the islands of Langerhans are found more abundantly in the tail of the pancreas, whereas acute pancreatitis, in most instances, occur in the head of the gland.

Summary and conclusions:

1. Acute pancreatitis is not an extreme rarity and is entitled to more serious consideration than is customarily accorded it.

2. The etiology is not understood, although much experimental data has accumulated. Cholecystitis is certainly a prominent factor.

3. The correct diagnosis was made before operation in not more than one-third of the cases reported in the literature. The character of the pain and the appearance of cyanosis are the most distinctive of the diagnostic criteria.

4. The mortality of all the collected cases is 51 per cent. Our own figure, 50 per cent, conforms with this.

5. The accepted mode of treatment by emergency laparotomy may not be the best one. Our experience favors dealing with these cases as one would with an uncomplicated acute cholecystitis or an acute salpingitis; namely, deferring the operation until after the acute phase, unless an occasion arises demanding immediate surgical interference.

6. A train of distinctive complications, for the most part incident to operative interference, increases the hazard of early operation.

COME ON DOCTOR!
WELCOME
it's Louisville this year!
24th Annual Meeting

SOUTHERN MEDICAL ASSOCIATION
Louisville, Ky. Nov. 11th-14th 1930

MEDICINE and SURGERY in every phase will be covered in the general and clinical sessions and the eighteen sections and conjoint meetings making up the program for the Louisville meeting—modern scientific and practical medicine and surgery brought right down to NOW. Louisville, "At the Crossroads of the Nation," November 11-14, 1930.

ARE you a member of the Southern Medical Association? Every physician in the South who is a member of his state and county medical societies can be and should be a member. The annual dues of $4.00 include the Association's own Journal each month, the Southern Medical Journal—the equal of any, better than many. "The best investment of the year," writes a prominent physician of the South. You will EVENTUALLY make that best investment—why not NOW?

SOUTHERN MEDICAL ASSOCIATION
Empire Building
Birmingham, Alabama

Southern Medical Association—IN the South, OF the South, FOR the South.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor
W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII OCTOBER, 1930 No. 10

GLASS BALL IMPLANTATION FOLLOWING ENUCLEATION*

By E. C. ELLETT, M.D., and R. O. RYCHENER, M.D., Memphis

THERE is no thought of putting forward anything especially new in this paper, and the points emphasized are so much the same as those embodied in the papers of Greenwood and Ralston before the American Academy of Ophthalmology and Otolaryngology in 1913 and 1921 respectively, that it may be thought we have drawn unduly from these sources. We have no hesitation in admitting our indebtedness to these two contributors, with whose conclusions we substantially agree.

The implantation of a gold or glass ball in Tenon's capsule after enucleation can be so easily performed and the cosmetic result obtained is so excellent that there can be little doubt as to the value of an implantation operation. Yet, it is not uncommon to encounter patients who have suffered a simple enucleation with its resulting lifelong disfigurement, and it is only fair to wonder why this should be. Perhaps the answer lies in the intricate techniques described by various originators of implantation operations, or in insufficient publicity concerning the value of this type of plastic surgery. It has seemed to us at any rate advisable to reiterate the value of glass ball implantation and describe a technique so simple that there can be no excuse for any operator doing a simple enucleation on account of the difficulty of doing an implantation, or unless there is a definite contraindication, such as infection, sympathetic ophthalmia, etc.

The history of enucleation is so interesting as to be worth a brief account of its development. Lange (1) in 1555 performed the first enucleation or extirpation of which there is any record, while Bartisch (2) in 1583 published the first technique of the operation. This was a dreadful method of removing the globe, by passing a strong needle and thread through the eyeball, putting traction on it and then severing the globe from its orbital attachments by a sharp knife or spoon, all without anesthesia. It was used only for tumors of the globe and orbit and kindred causes, and needless to say was not often employed. However, it remained as the sole method of enucleation until 1841, when Ferrall (3) and Bonnet (4) gave us the technique now commonly in use in simple enucleation of the globe. Mules (5) in 1885 brought forth the method of implantation of glass, gold or silver balls in the sclera after evisceration, but the inflammatory reaction immediately following this operation, together with the possibility of sympathetic ophthalmia, has brought this operation into disrepute. Frost and Lang (6) in 1886 simultaneously conceived the idea of implanting some solid substance in Tenon's capsule. Frost sutured the superior and inferior recti with the overlying conjunctiva, while a second suture united the internal and external recti and their conjunctiva.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

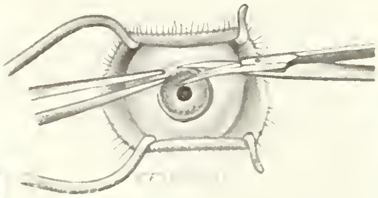


FIG. I. The incision of the conjunctiva, which should be made as close as possible to the cornea.

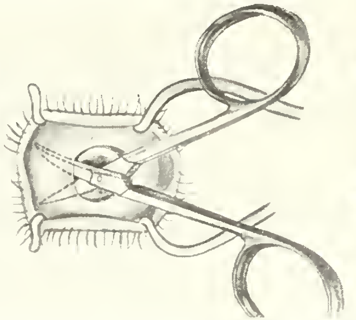


FIG. II. The separation of the tissues from the globe by a blunt dissection with scissors in reverse action.

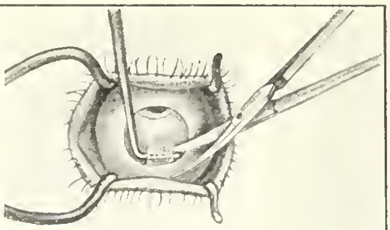


FIG. III. Cutting the muscles. All are cut close to the ball except the internal rectus.

Lang's technique differed from this only by including the capsule of Tenon in the sutures. These operators were the pioneers in a method which should be universally used. Since their time many modifications of the idea have been advanced by various operators, such as Verhoeff, Oliver and Sweet, most of which include suturing the muscles in such a way as to make the technique not only difficult to understand, but also hard to carry out as well as being entirely unnecessary.

Beard (7) in his ophthalmic surgery is rather doubtful about the results of the implantation methods and says: "Abundant experience has demonstrated that inorganic substances, such as glass or metal, introduced in the capsule of Tenon are generally, sooner or later, eliminated." This has not been our experience.

Greenwood (8) called especial attention to Tenon's capsule, and pointed out what a well marked membrane it is, and advocated suturing the capsule over the ball completely and then suturing the muscles over this. He recommended introducing 22 mm. glass balls, or as large balls as the cavity would admit, and reported excellent results.

For some years it has been our practice to implant a glass ball in Tenon's capsule whenever the capsule or orbital tissues were in healthy enough condition to permit, and our method has been a combination of the Ferrall and Frost-Lang methods, without any suturing of the muscles. Practically all of our implantations are done under local anesthesia; the only contraindication to this method being the prohibitive youthfulness of the patient. We give a hypodermic injection of morphine sulphate, gr. 1/4, and Hyoscine Hydrobromide gr. 1/200, one hour before the operation. In females of small stature the dose of morphine is cut in half. The usual routine administration of six drops of four percent cocaine solution is carried out, and then there is given a ciliary ganglion injection of one per cent novocain solution with adrenalin, usually from four to six cc, and always enough to produce a slight proptosis of the globe. Under this procedure practically no patient has experienced any pain or even realized that an operation has been performed. No undue hemorrhage has been encountered following this technique. The conjunctiva is cut by closely circumscribing the limbus (Fig I) undermined, and the respective recti tendons severed. The undermining, which separates all the tissues from the globe back to the equator, is done by putting the closed scissors in and opening them (Fig II) a very satisfactory method which we have not often seen used by others. The internus is cut on the mesial side of the elevating hook, the remaining three severed close to the ball (Fig. III). The internus stump is grasped with small curved hemostats (Fig. IV) to give a firm hold and control of the globe. The globe is then proptosed by depressing the speculum, rotated externally and the nerve cut from the nasal side. The oblique tendons and accompanying tissues are then dissected away close to the sclera and nerve, and a hot saline pack inserted with bayonet forceps to the apex of the orbit, and held in position by firm pressure till all bleeding has ceased. The capsule is then picked up by four mosquito forceps, as illustrated, (Fig. V) and it is always surprising to see what a complete, strong tenacious membrane the shining silver capsule is. With some convenient instrument, (Fig. VI) a suitable sized glass ball, usually 16 or 18 mm. is then placed in the capsule, firmly depressed and held in position by a strabimus hook, which serves not only to keep the ball out of the way while closing the capsule, but helps also to prevent bleeding or oozing behind the ball. The capsule is closed with a purse string suture of either 00 chromic catgut or irondyed silk, No. 1 to No. 3 (Fig. V and Fig. VII). The conjunctiva is closed with a horizontal running suture of silk, the edges being left long to facilitate removal (Fig. VIII) and a firm pressure head bandage is applied. From some of our subsequent results we believe this pressure to be a very important factor in securing retention of the ball. The patient is kept in bed for twenty-four hours, allowed up and about thereafter, and after seventy-two hours the pressure bandage is taken off. The conjunctival suture is removed by cutting it centrally and withdrawing the two ends left long at operation. The patient leaves the hospital at this time with only an ordinary eye dressing, is seen occasionally for cleansing purposes, and as a rule is ready for a prosthesis at the end of two weeks.

Many substances have been proposed as suitable for introduction into Tenon's capsule after enucleation, some of which we have tried. Gold balls are very popular and no doubt satisfactory, but they are more expensive than glass, heavier, and if not of solid gold, are liable to corrode in time. Aluminum balls, especially those with windows in them designed to permit the tissues to penetrate and thereby fix them more firmly, have been found objectionable because they seem to act as irritants, and if it becomes necessary to remove such a ball it is very difficult on account of the fact that the tissues have entered the windows. The basket like wide balls never appealed to us and were never tried. The same might be said of the balls carved from cartilage, as suggested by Magitot, and those made of paraffin. Fat has been a popular implant, but our experience with glass balls has been so satisfactory that we have hesitated to change to another material, many other substances being no doubt quite as satisfactory.

The latest bid for favor is the ball of bone from which all the organic matter has been burned. These balls are light, porous and probably worthy of trial.

In omitting special suture of the muscles, we are influenced by the fact that the muscles do not normally join together over the eye ball, but are attached to the globe a little in advance of the equator. The purse string suture in the capsule brings the muscles sufficiently far forward for them to impart the desired motion to the glass ball, and to unite them over the ball would seem likely to pull the ball so far back in the orbit that much of its value as a support to the prosthesis would be lost.

The first implant made by either of us was in 1898. The patient had a greatly shrunken eye and we could not isolate the muscles. Catgut was used to suture the tissues at the four points corresponding to the recti muscles, a method which we think is not satisfactory in that it does not give the best results in covering the ball. In this case a gold ball was implanted, but it became exposed and was removed on the fourth day. We would not now consider implanting any but the smallest ball in such a case. Lack of a cross index of our records has made a search for the early cases difficult, but in 1901 we also had a failure to retain the ball. In this case interrupted silk sutures were employed. It is only fair to include in this report the results in the cases operated on by the technique we now employ and recommend, as we feel sure that early failures were due in part at last to unsatisfactory closing of the deep tissues (capsule and muscles) over the ball.

In regard to the size of the ball, we were influenced by Dr. Greenwood's advice during the war to the effect that as large a ball

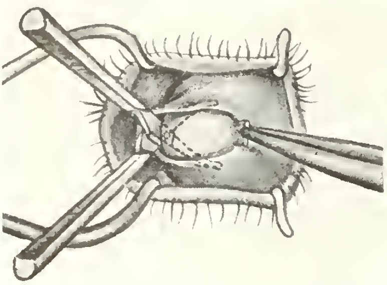


FIG. IV. The ball is grasped by the stump of the internal rectus and the nerve severed from the nasal side.

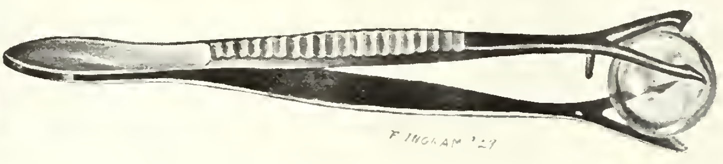


FIG. V. The glass ball held in a double fixation forcep, which is a suitable instrument for holding it.

as possible should be used, namely 20-20 mm. We are satisfied that the use of this size ball results in great tension being placed on the tissues and sutures covering it, with the consequent greater possibility of expulsion of the ball, and we also feel that this size ball does not give the best cosmetic result.

A 16 to 18 mm. ball, with a carefully selected "shell eye", and not a "reform" eye, gives us the best cosmetic results. In conversation with a prominent maker of artificial eyes who also supplies the balls for implantation, we were surprised to learn that he advocated even smaller balls, even to eight mm. in diameter. He uses "reform" eyes, which of course require more room than the shell eyes do.

We have never had a ball become displaced or slip out between the muscles into the orbit. It is conceivable that it might pass backward so far as to be of little use in supporting a prosthesis.

Since 1919 we have done seventy-eight implantations in the manner described, as a routine measure, without selection. The ball was expelled in seven cases, all within nine days of the operation. The following are the brief histories of these cases.

W. V. J., aged 16, was cut in the right eye by a piece of glass on Feb. 11, 1923. There were wounds in the sclera running more than half way across the cornea. The anterior chamber was full of blood and vision was reduced to perception of moving objects. A conjunctival flap was put over the cornea, but great reaction followed, with protrusion of the conjunctiva through the palperbral fissure, and the vision fell to questionable light perception. The eye was removed under general anesthesia on Feb. 21 and a 20 mm. glass ball implanted. The capsule was closed with catgut and the conjunctiva with silk. Next day a good deal of oozing was noticed from the wound and hemorrhage into the tissues of the orbit, which oozing continued for eight days. The whole orbit was swollen from blood, and on March 2nd, the swelling began to subside. On March 3rd, ten days after the operation, the glass ball was seen to be exposed and it was removed. No bleeding followed, but it was a month before the swollen orbital tissues assumed a normal appearance. The boy's clotting time was from 5½ to 6½ minutes. Hemostatic serum was given, and apparently had a good effect on the bleeding. In July of the same year a minor operation was done on the socket to enlarge it, and this small incision bled for seven weeks, necessitating repeated transfusions and almost costing the patient his life. His case was evidently one of hemophilia, and the loss of the ball was caused by the excessive and unusual bleeding.

Miss T., aged 18, was badly cut around the face in an automobile accident and the left eye was cut half in two. Immediate enucleation and repair of her other cuts was done under ether. A glass ball was implanted, the capsule closed with catgut and the conjunctiva with silk. After her recovery from the anesthetic, she complained of the tightness of the bandage. A zealous interne removed it, with the result that there was a hemorrhage into the capsule, and the pressure on the glass ball caused it to be exposed on the sixth day. The exposure increasing, it was removed on the eighth day.

W. T. was struck in the right eye by a pin when an infant and as the result of this had a blind and painful eye which was removed under ether in April, 1927, he being then fifty-nine years old. The wound was closed with catgut and silk. There was a good deal of swelling about the third day, and we thought it was due to a deep hemorrhage. On the eighth day a small central slough occurred and on the eleventh day the ball was exposed. Thirteen days after the operation it was extruded. Some blood clot was found in the capsule of Tenon, but no sign of infection. It was afterwards learned that the nurse loosened the bandage by cutting it and this permitted the usual hemorrhage which probably caused the expulsion of the ball.

L. M., a sixty year old negro, had a blind and painful eye following an operation done for glaucoma about a year before we saw him. A hypopyon ulcer was present. The eye was removed under local anesthesia, July 20, 1929, and a 16 mm. glass ball implanted. There was a good deal of oozing and an odor suggestion infection. On July 24, the ball was exposed and was removed. A large clot filled the capsule. It was subsequently found that the interne to whom the dressing of this case was left, did not put a pressure bandage on after the operation, but a pad held by adhesive.

Mrs. W., aged 62, was seen in April, 1927, with what was apparently hemorrhagic glaucoma in the left eye. She had high blood pressure and albumin and sugar in the urine. The right eye showed small retinal exudates and hemorrhages, and the left eye was inflamed, painful and blind, with a wide pupil, steamy cornea and T. 100 Schiotz. Under gas anesthesia, with a little ether, the left eye was removed on May 4, and an 18 mm. glass ball implanted. There was a good deal of subconjunctival hemorrhage and secretion and a small central slough developed on the eighth day, exposing the ball, which came away on the dressing on the eighteenth day. The patient died in September. It was a mistake to have attempted an implant on such a poor subject.

C. M., aged 22, was cut in and around the right eye June 25, 1927. Enucleation with implantation of a 20 mm. ball was done on the twenty-ninth, silk being used for both capsule and conjunctiva. The skin wounds had been repaired, but the stitches were removed and the wounds resewn. They did not heal well, and on July 7th (the eighth day) the capsular wound gaped, and though it was closed by suture, it did not unite and the ball was lost on July 10, eleven days after its insertion.

S. H., aged 52, was cut in the right eye by the glass from a windshield and the eye was removed under ether the day after the accident, August 21, 1926. There was a good deal of reaction, but the wound seemed to have closed till nine days after the operation, when it suddenly opened, exposing the ball, which came out the next day.

This seems the appropriate place to express our conviction that the operation is best done under local anesthesia. The addition of adrenalin decidedly lessens the primary bleeding, which is also discouraged by the calm mental attitude of the patient under the influence of morphine and hyoscine, and one escapes the excited struggles of a patient under ether with the increased congestion of the tissues of the head and neck and their greater vascularity. Postoperative vomiting, with the associated congestion of the orbital tissues, is also avoided. A study of our failures leads us to conclude that the avoidance of hemorrhage is a very important factor in securing a successful result in this operation.

If the ball is expelled or removed for any reason, nothing is lost compared to what the result would have been if no attempt at an implant had been made. Indeed Feingold contended that if the cut ends of the tendons were joined by suture, the cosmetic result, and especially the movement of the prosthesis, would be as good as could be

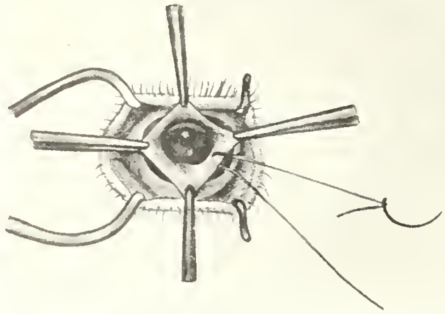


FIG. VI. The capsule of Tenon is held open by forceps. The ball has been inserted, and a continuous purse-string suture is being made.

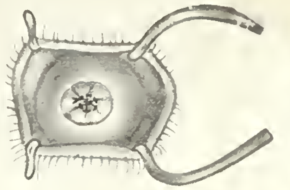


FIG. VII. The purse-string suture is tied.

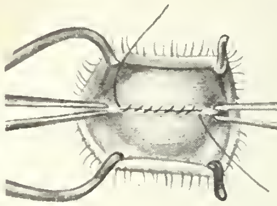


FIG. VIII. The conjunctiva is closed with a continuous silk suture.

attained by an implant, but we do not agree with this.

We have deliberately removed the ball in four cases as follows:

Miss B. was hurt in an automobile accident, the left eye being cut across the cornea. After two weeks of observation and conservative treatment the eye was removed and a glass ball inserted in Tenon's capsule. The socket healed normally and she left the hospital. Two weeks from the day of the enucleation sympathetic ophthalmia developed in the other eye. It was decided to remove the glass ball to avoid any possible irritation from that source, and this was done through a free incision of the overlying orbital tissues. The removal of the ball had no effect on the course of the sympathetic inflammation.

Mr. C. C. H. had a partly shrunken eye following an unsuccessful cataract extraction. This was removed and a glass ball implanted. There was a great deal of reaction and a small slough separated from the line of the wound on the ——— day, exposing about 8 or 10 mm. of the ball. It was explained to the patient that the ball could probably be retained by suturing, but as it would have prolonged his stay away from home, he decided to have it removed, which was done and the socket promptly healed.

J. M. was seen in 1918, then aged 30. A year and a half before he had been struck in the left eye by a nail. He was treated, though the sight was lost, and he made a slow partial recovery. The eye was subject to attacks of inflammation, and when examined, the right eye was sensitive to light. Enucleation was advised. The man was not seen again for four years, when he showed a marked scleral staphyloma and was having attacks of pain and inflammation, though free from trouble at that time. The left eye was removed in September, 1922, and a 20 mm. glass ball implanted. The capsule was closed with catgut and the conjunctiva with silk. In June, 1929, he reappeared, complaining that the right eye had felt weak and sandy for several days, and when he tried to use it for far or near, it would close. The vision was 20/20 and J-3, and except for a palpebral conjunctivitis the eye was normal. The left socket was normal, well filled by the implanted glass ball, and was slightly tender on pressure. An artificial eye had never been worn, but the socket was not inflamed. Rather at the patient's suggestion and for lack of anything else to do, the ball was removed. The immediate effect on the fellow eye was good, but after a few days, he again began to complain. When last seen on July 29, 1929, he was having spells with his left eye and he had to stop and rest it by closing. The eye was still normal, vision 15/30 and J-3. The history is given in some detail as we finally considered it a neurosis and that the glass ball had nothing to do with the symptoms.

A somewhat similar case can be mentioned here briefly. A young man began to have pain in the socket several years after a successful implant. The pain was severe, but there was no sign of inflammation or infection and there was no tenderness. The pain was confined to the socket and failing to find any other cause, the ball was removed, with immediate relief of the symptoms.

It was amazing to see how firmly the ball was held by the covering of capsule and conjunctiva in these cases and it was only by considerable effort that the ball was finally pried out through a large capsular opening. One ball is exhibited removed from J. M. after seven years, and shows numerous intertwining striae on its surface, which must be the crevices to which the capsular tissue was attached, much as ivy creepers are imbedded in the niches of the wall to which it clings. Our experience in these cases lead us to believe that one need not be much concerned over the possibility of late expulsion of the implant.

It is generally felt that when a ball is exposed it is ultimately lost. In the following case we succeeded in retaining it by suturing.

E. M. H. was seen Nov. 28, 1925, three months after the removal of a magnetic foreign body from the right eye. The eye was soft and showed all the signs of iridocyclitis, including reduction of tension, and was removed Nov. 30 with implantation of a glass ball and suture by catgut and silk. There was a good deal of reaction and finally a small slough formed on the center of the wound, which was removed on Dec. 14. On Dec. 19 the opening had not increased in size and was perfectly clean. The edges of the gap were denuded and it was closed by one double silk stitch which closed the tissues over the ball. On removing the stitch after eight days a small gap remained. On Jan. 1, 1926, this was freshened at the edges and closed with a mattress suture passed through small silver suture places on each side of the wound. This stitch was left for one week and when removed the wound was found completely closed over the ball, and has remained so.

On another exactly similar case we felt that it would have been retained by the same procedure, but the patient was just ready to go home and when it was left to him to be decided he would rather let the ball be removed than prolong his stay in the hospital in an effort to retain it. The case is detailed above. (Mr. C. C. H.)

For a time chromic catgut was used exclusively in the capsule, but a good deal of central wound reaction was encountered, resulting sometimes in a good sized slough, which may have resulted in the loss of the ball in one case. We do not know if the chemical absorption of the catgut is responsible for this, but it is possible, and might be a reason for employing silk. An objection to silk is that it often continues to work out of the tissues, which it annoying. This is especially apt to occur if the complicated method of suturing, sometimes advised, is followed. This occurred in two cases as follows:

Mrs. S. was injured by having the left eye cut with glass in 1900. The eye healed with a vision of 15/40. In 1905 the retina became detached but gave no special trouble other than with vision till 1921, when secondary glaucoma developed and the eye became red, painful, besides being blind. It was removed on July 14, 1921, and a glass ball implanted. Besides the purse string suture, additional sutures of silk were used to approximate the ends of the muscles as advised by Greenwood. The socket healed and the ball remained with an excellent cosmetic result, but particles of the silk worked out and were removed from time to time till Dec. 1st, when the last was removed, nearly five months after the operation.

A somewhat similar result was noted in Mr. McL. whose eye was removed on July 26, 1929, following an injury. Silk was used for both the superficial and deep sutures. On October 7th the deep suture had worked through the conjunctiva and was removed.

It has been our impression that much orbital edema and reaction has been induced by attempting to implant as large a ball as the cavity will hold, and for more than a year we have been implanting balls of a diameter of 18 mm. or less with much less reaction, equally as good cosmetic results and without the loss of a ball. We have not been deterred from implantation by the age of the patient, intraocular tumor or intercurrent general disease. We note that the elderly patient is often more concerned over the post-operative result than the young one, and there can be no harm in attempting to prevent disfigurement at any period of life. Nineteen of our cases who obtained excellent results were over sixty years of age. Three cases showed intraocular tumor on pathological examination, one patient dying from abdominal metastasis after eighteen years, but without orbital recurrence, the other two being all right after eighteen and eight months respectively.

We hesitated at first to make an implant in cases of known intraocular tumor, but since we have not had a local recurrence of the growth in any case of intraocular tumor except glioma, we considered that it was permissible to use the implant in such cases.

One true case of sympathetic ophthalmia has been seen in our series of cases and in that case the sympathetic ophthalmia developed two weeks after the operation. We would not do an implant in the presence of a sympathetic ophthalmia as any cause of irritation in the neighborhood of the exciting eye might be held responsible for an unfavorable termination of the case. At any rate we might invite criticism by such a course.

Late Implantation. In spite of the attention which Webster Fox's paper on this subject attracted, the possibility of a late implantation does not seem to be generally appreciated. We have done one especially gratifying case to report in this connection, whose interesting features warrant relating the circumstances in some detail.

Miss L. had heterochromia iridis, the right being the affected (lighter) eye. In due time she developed heterochromic cyclitis, with cataract and glaucoma. She was a maiden lady of prominent social position and blessed with worldly goods, and was both anxious and financially able to have everything possible done for her vision and for her appearance. She was seen in consultation by Dr. Hiram Woods, who grasped the situation so completely that he urged that everything be done to preserve her eye because the disfigurement of an artificial eye would be a heavy cross to her. Other consultants failed to be so impressed and the eye was eventually removed in 1918. In 1919 when I returned from the army I found this lady practically a hermit. She rarely went out and then only when heavily veiled. The implantation of an 18 mm. ball through an invision in the upper and outer angle of the orbit was successful, and she now wears an artificial eye that is at least not a disfigurement, and she has resumed her social life and goes everywhere. Upon the occasion of a slight injury to her head a snap diagnosis of intracranial injury was made because the right eye did not move as freely as the left and the pupil was inactive.

The practice as we have recently seen it in some of the large European clinics, is to do a simple enucleation, with possibly the closure of the conjunctiva by one suture, and often no closure at all. While the desired object of the implant is not always perfectly attained, we are satisfied that the average result is vastly better than without it, and such a method will often banish the ghastly, staring, immovable objects that advertise rather than disguise the affliction of the unfortunate sufferer.

CONCLUSIONS

(1) Glass ball implantation should be employed after all enucleations in which it is not definitely and positively contra-indicated.

(2) Muscular sutures are unnecessary to insure retention of the implant, as a purse string capsular suture is sufficient.

(3) Glass balls, 16-18 mm. in diameter, or less in smaller individuals, give excellent post-operative and cosmetic results.

(4) A pressure bandage should be maintained for seventy-two hours and may then be dispensed with.

(5) The age of the patient is no contraindication to implantation.

(6) Local anesthesia combined with morphine and hyoscine hypodermatically is the preferable method.

BIBLIOGRAPHY

(1) Amer. Encyl. of Ophth. Vol. VI, p. 4391.

(2) Ophthalmodouleia oder Augendienst, 1583.

(3) Dublin Jour. Med. Science, Vol. 19, 1841, p. 335.

(4) Ann. D'Occulist, Vol. V, 1841, p. 27.

(5) Amer. Jour. of Ophth., Vol. VI, p. 4428.

(6) Amer. Jour. of Ophth., Vol. VI, p. 4447.

(7) Ophth. Surg. Board, 1910, p. 446.

(8) Arch. Ophth., Vol. XLIII, p. 1.

DISCUSSION

HILLIARD WOOD (Nashville): The technique described in the paper represents the maximum of safety and cosmetic effect of the enucleation of the eye so far developed. It has all the protection against sympathetic ophthalmia of a simple enucleation and all the good cosmetic effect of a Mule's operation. It has the advantage of the Mule's operation in that it is less liable to be followed by sympathetic ophthalmia.

The operation as described is not applicable in well developed cases of pan-ophthalmitis, nor in malignant growths requiring exenteration of the orbit.

It can be said against this operation that the technique is somewhat more tedious than in simple enucleation; that the stay in the hospital is somewhat longer than after simple enucleation and that there are instances where the artifical ball implanted in Tenon's capsule becomes subluxated giving the artifical eye an abnormal slant.

SEND IN YOUR APPLICATION FOR SPACE IN THE

Physicians' and Surgeons' Directory

MEDICAL ETHICS AND MEDICAL CARE*

By MORRIS FISHBEIN, M.D., Chicago

THE first ethical medical code of which we have any definite knowledge is the code of Hammurabi of Babylon, which dates back to about 2250 B. C. That code is known through the legends that have come down in association with it. It was the famous code which established an eye for an eye and a tooth for a tooth, which established various penalties for having performed the wrong operation. Fortunately enough, we do not have such codes today to control various forms of medical practice or there would be a great many mutilated non-medical healers circulating around about the United States and a great many graveyards filled with the bodies of cultists and quacks who had provided medical care for people without having any possible qualification to undertake such service.

The great code of Hippocrates, the Hippocratic oath and the law of Hippocrates are of the period 350 B. C. The oath of Hippocrates is not the law of the medical profession today any more than the Bible is the law of the United States today. There has always been considerable confusion in the public mind as to just exactly what the Oath of Hippocrates represented in medical practice. The Oath of Hippocrates represents a series of ideals drawn up for the ancient Greeks by one of the great founders of modern medical science, by a man who unquestionably established science as the art of observation and the treatment of a human being as a fellow-man. It is important to emphasize this particular fact for the simple reason that some of those who have attempted to discuss the ethics of the medical profession have gone back to the ancient Oath of Hippocrates and, pointing at that the finger of scorn, have said: "This is the law that regulates and controls the medical profession in the United States today." The Oath of Hippocrates was significant for certain points. It established a guild of physicians, since the physician pledged himself not to teach the art of medicine to any but his own sons or the sons of those of his friends who had been physicians. It established definitely a minimum standard of character and of education for all who proposed to heal the sick. I think if there is any fundamental in the regulation of medical practice today, it is that important standard. There must be, if we are to have a scientific medical profession and one in which the public can trust, a minimum standard of education for all who propose to heal the sick, and not only a minimum standard of education, but a minimum standard of character.

I want to emphasize the point about character for the simple reason that Justice Brewer of the United States Supreme Court, in a case which came before him, emphasized definitely the fact that medical practice bears so intimate a relationship to the lives of men that it is within the province of every regulating body in every state to establish a standard of character as well as a standard of knowledge for all who propose to heal disease.

The Oath of Hippocrates commanded secrecy as to the patient's private affairs and as to the patient's ailment. There are those who would attack the idea that the physician must keep secret the affairs of his patient. The Golden Rule is fundamental in all human relationships. We must do to others as we would have them do to us. When we apply that test to the problem of secrecy in relationship to the patient's affairs, we find that there can be no law higher than the law which demands that the rights of the patient are paramount and that the rights of others are secondary. The patient calls the physician in order to relieve him of his particular difficulties, and the rights of the patient must be first.

It is constantly the insinuation of those who attack the Principles of Ethics of the American Medical Association that these principles are created for the good of the profession primarily. I do not think I exaggerate the situation at all if I say that leaders of American medicine from the first have always emphasized that the interest of the patient is above other interests and that the interest of the physician and the profession must come second to the interest of the patient. Whatever is good for the patient must be good for the profession; whatever is good for the profession is conversely also good for the patient; and whatever is bad for the patient is bad for the profession.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

In addition to the Oath there was the Law of Hippocrates. The Law of Hippocrates was not a stimulus to high ideals and high morale in the profession. The Law of Hippocrates was concerned primarily with what might be called medical etiquette. There is a difference between medical ideals and medical etiquette.

Ideals do not change with the passage of time; they do not change, because human relationships are a part of life. Etiquette changes with the shifting conditions in social life; etiquette changes with the nature of medical practice; etiquette changes with the coming into medical practice of all sorts of queer groups which represent unqualified medical practice.

It is sad, perhaps, that the Principles of Ethics of the American Medical Association, when first drawn up, and as they have been modified again and again since that time, endeavored to include in one series of observations both ethics and etiquette.

After the time of Hippocrates, various codes and various lists of rules and ideals were drawn up by various groups for the regulation of medical practice. In 1224. Frederick the Great drew up a series of laws regulating the physicians of his country. He emphasized not only the nature of the physician and his character, not only the minimum standard of education, but also established a fee bill, provided for the establishment of boards of health, provided for all sorts of contingencies that might arise in medical practice, and this he did by law.

But Frederick the Great found, as every other legislative group has found since the time of Frederick the Great and, in fact, previous to that time, that morals and ideals cannot be legislated into any particular group. One cannot legislate morals and ideals and character into physicians. Those things must be innate in the men who come into the profession. It may be, perhaps, the proud boast of American medicine that the vast majority of men who have come into the medical profession in this country have set up a standard of ideals and morals and of ethics which represented always the achievement of the highest that could be attained.

We come, then, to a period in which two groups were concerned with the morals of the medical profession. There was the group outside of medical practice who were studying the character of physicians and who were writing the famous satires which did much to modify the routine medical etiquette of the profession. I refer particularly to Linacre, to Moliere, to Herter, to Lesser, and to several others who wrote satires about physicians and who pointed out the ridiculous character of a fixed costume for the physician, of a fixed type of equipage in which he should ride about, of the putting of books in his office in order that one might think him erudite, of the holding of a stuffed fetus in a jar on a shelf in order that one might know he had some familiar knowledge with obstetrics. All these things that represented the attempt of a man to display the little knowledge that he had and which might give him a little advantage over the other man were recognized by the satirists as things which ought to be outside of medical practice.

At the same time there were within the profession itself many great leaders who constantly emphasized the ideals that should guide those who were taking care of the sick. There were Ambroise Pare, Guy de Chauliac, Paracelsus, Sydenham, and many others who wrote, among their great contributions to medical science, guide books to morals and the ideals which should guide the medical profession.

Then came the man who established the first organized system of ethical principles and etiquette. His name was Percival. Percival was an interesting character. If he lived today, he would unquestionably be among the leaders of medicine, exactly as he was among the leaders of medicine in his period, from 1740 to 1804. Percival suffered with astigmatism and with migraine. Now that is interesting in the analysis of his character. Not long ago I was talking with Dr. Ray Lyman Wilbur and he developed an interesting conception relative to the relationship of eyesight and false teeth to philosophy. We do not have today the types of philosophers that lived around 1800. Consider Kant, Hegel, Spinoza, Descartes, and many others of the great philosophers. Where today are philosophers and thinkers of that type? The reason ascribed for the change was the coming of eye-glasses and of false teeth. In those days when a man reached thirty-five or forty years of age, most of his eyesight was gone and his teeth were bad and he couldn't do any active physical work of any kind or get around in the community, so he sat down with a brain that was still active and began to think for the benefit of mankind. As he thought he evolved from his experience ideas that were fundamental for the advancement of mankind. In these modern times, due to false teeth and eye-glasses and constructive surgery, it is possible for a business man or a banker to go on actively functioning in his work until he is sixty-five or seventy or even eighty years of age. Then when he sits down to think, what does he have left to think with? He gives forth conceptions such as we get from many of our great modern leaders in the fields of finance and business and manufacturing. We get the effects of senile thought instead of the effects of brains that are still active.

Thomas Percival, who formulated the first series of principles of ethics used by the medical profession of England and later by our own country, had such severe astigmatism and headaches that he turned over most of his active work to his young assistants. Then he sat down and cogitated and worked out the philosophical principles of which I speak.

In 1761 he entered Edinburgh University. He received his M.D. at Leyden in 1765. He was made a Fellow of the Royal Society of England in 1765 when he was twenty-five years of age, at the same time that John Morgan of Philadelphia was made a Fellow of the Royal Society. John Morgan, of Philadelphia, was such a great leader in American medicine that when he visited Italy, Morgagni, the great physiologist, tried to figure out whether or not John Morgan might not have been his relative.

As Thomas Percival continued his practice, he published in 1767, when he was twenty-seven years of age, a book of philosophical essays and commentaries on medical life which attracted wide attention. He was closely associated with John Hunter and William Withering, the discoverer of the use of foxglove or digitalis, and with Heberden. He was associated in Manchester with Charles White, who unquestionably knew about the transmission of puerperal fever and who wrote important works on that subject long before the time of Semmelweis and Oliver Wendell Holmes.

Associated with that type of men, Thomas Percival began to think soon about the future of the medical profession. But more responsible, perhaps, than this association, for the drawing up of the first ethical code or the first series of ethical principles was the fact that an argument started in the hospital in which he worked. Any time a physician begins to agitate too vociferously the problem of medical ethics, look around to see what sort of argument he has had with some other physician, some corporation, institution or group that is disturbing economically the field of medical practice. The average medical student who is passed out a copy of the principles of medical ethics at the time of his graduation, puts it away in a drawer and forgets about it until he gets out in practice somewhere in some community and gets himself into a little difficulty with some neighboring physician. Then he goes to look in the book to see if he can't find something in the book that will help him. That, of course, is the wrong attitude toward all sorts of principles of medical ethics.

Thomas Percival is known also for the

fact that far back in 1791 he recognized the value of cod liver oil. He endeavored in every way possible to promote the use of cod liver oil for virtues that he was convinced it possessed. The story of cod liver oil in itself is one of the most romantic histories in all the history of medicine.

Thomas Percival was a thinker primarily. He wrote interesting fables of morals which he distributed to his children and to the children of his friends. Finally, about 1793, he was asked by the group associated with the Manchester Infirmary, to draw up a series of ethical principles to guide them in their conduct of the hospital and of the infirmary. He worked three years, then he drew up a first draft and circulated it among his friends. He sent a copy to Charles White and one to Heberden and to John Hunter, and he sent a copy to William Withering and all the other men with whom he worked. He sent a copy to Erasmus Darwin. These men sent him back their comments on his series of ethics. Then he revised the manuscript according to the comments and criticisms and suggestions. Finally, in 1803, there was published the first series of principles of ethics.

That series published in 1803 represents an attempt to organize practice according to the moral principles and etiquette of that time. Bear in mind that at that time medicine was divided into three groups: physicians, surgeons and pharmacists. When he drew up his principles of ethics, Thomas Percival concerned himself with these three groups primarily. Then he added one more section on the control of the hospital.

In 1823, the New York State Medical Society drew up for itself a series of principles of ethics. That series of principles was Thomas Percival's series. Then in 1832, the Baltimore Medical Society drew up a series of principles. They took Thomas Percival's series and adopted them for the Baltimore Medical Society. In 1846, at the call of N. S. Davis, the American Medical Association was organized, and in 1847 held a meeting in Philadelphia. At that meeting Dr. Isaac Hayes, editor of the American Journal of Medical Sciences, presented a series of principles of ethics for the guidance of the American Medical Association. The series Hayes presented was essentially the principles of ethics drawn up by Thomas Percival in 1803. He endeavored to change the language of the Percival code of 180 to the American language of 1847, and in addition he added a few statements from the writings of Benjamin Rush. He gave to Benjamin Rush, one of the signers of th Declaration of Independence and one of the greatest moral philosophers that has ever existed in medicine, credit for the sections that he wrote, but he did not indicate which sections those were.

Since 1847, this series of principles of ethics has been the basis of the ethical principles of the American Medical Association. From time to time changes have been made to meet advancing conditions. Unfortunately, the changes that were made and that are likely to be made in the future. will never meet the situation exactly as it is at the time that the principles are adopted. Legislation is always years behind scientific and human progress and the changing social order.

As an example consider the radio. When the radio was discovered there were no laws regulating the transmission of voices over the air, there were no laws regulating what might be spoken or said over the air by anybody at any time. Even today the laws governing the use of the radio are a least fifteen years behind the first use of the radio.

We pass laws regulating the drugs that a physician can use, without any recognition whatever of the scientific use of those drugs. Congress is certainly not empowered to pass on the scientific use of many of the drugs that the medical profession uses. Nevertheless, it is quite possible for a legislative body to pass laws regulating what a physician may use, and it takes from fifteen to twenty-five years to educate a Congressman as to scientific facts. Laws regulating the internal activities of the medical profession are usually behind the actual state of medical practice and the social relationships of men at the time the laws are passed. However, one thing is fundamental and does not change: the ideals, the moral standard, the character of the profession. Only the etiquette, the relationships in custom of one physician dealing with another and dealing with his patient, may change.

In the past twenty-five years there have been more changes in the nature of medical practice than in all of the twenty-five centuries previous. In the past fifty years there has been more progress made in scientific medicine than in all of the fifty centuries previous. It has not been possible for medical legislation to keep abreast of this rapid progress.

The general practitioner of fifty years ago was fully competent for all of the things that he attempted to do. When called to see a patient he would make his diagnosis primarily on an observation of the pulse, on auscultation and percussion, on a recording of the temperature, on the color and appearance of the patient's skin, on a look at the tongue, and largely on the history of the case. Since the time of Hippocrates, scientific diagnosis has been made largely on observation of the patient and the history of the case. Hippocrates had emphasized the natural history of disease. From the case reports in the Hippocratic texts, it is possible, with modern medical knowledge, to diagnose with modern diagnoses the conditions described in 340 B. C. This is possible because a perfect picture of the natural history and course of the disease and of the appearance of the patient is available.

The old-time family physician was trained primarily to apply the brains that he had and his knowledge of disease and the five senses given to him by his Creator to the diagnosis of disease, and he was right in the vast majority of instances. The discoveries by Pasteur in 1879 brought the bacteriologic era. Then came modern physiology, pharmacology, pathology, biology, physics, and biological chemistry. With them came the period when glassware began to be substituted more and more for brains. Thus came the time when we endeavored to make medicine so thoroughly scientific that it would be possible for any mathematician, taking the observations from the laboratory, to put them down in a definite column, and on the basis of these observations to make a diagnosis, perhaps even without seeing the patient.

One of our German colleagues has displayed a picture of the physician of the future. He sits at his desk three hundred miles away from the patient. Over the radio by television comes the appearance of the patient, thrown on a color screen before the physician. Over the radio by amplification comes the beat of the heart and the sounds in the chest as thumped out by some technician three hundred miles away. There come the electrocardiogram, the manometric record, the record of the pulse by the sphymograph. There comes every possible sign and symptom that can come by machinery, and the doctor sits at his desk and says, "John Jones has got syphilis; give him the usual treatment." It is simple!

That is the mechanization of medical practice. Big business men, philanthropists and organizers who have been responsible for putting organization into American life on a scale that does not exist anywhere else in the world, are endeavoring to put into scientific medicine exactly that kind of organization, technical skill and technical care.

We have in certain places in our country today institutions organized for the treatment of venereal disease on a mass scale, in which they treat from 1,800 to 2,000 patients per day. Patients are lined up to be given their injections, put on tables, and the attendants pass along, change the needle, and shoot the patient, change the needle and shoot the patient.

We used to talk a great deal about the three classes of mankind, the rich, the poor, and the middle class. It is said that the rich and the poor get the best of medical care and the middle class man, the white collar worker, is the one who suffers.

All physicians know that the poor do not get and can never get the same type of medical care that the rich get and for which the rich pay. Consider the rich patient with pneumonia, lying in a private room, attended by several shifts of nurses constantly changing his packs and giving him the necessary treatments. His mind is not disturbed by the fact that his family is without funds and without food. His mind is not disturbed by the fact that his job will be gone when he gets out of the hospital and that he will have to look for another job. He is not lying out in the middle of an eight-bed or a twelve-bed ward where one nurse attempts to watch twenty-four patients at one time. Since the beginning of time all of the economic laws that apply to mankind in every one of human-kind's activities apply also to the practice of medicine. No one is attempting to regulate the price of groceries, the price of clothes, the price of rent, by any law that will bring these things down to what the middle class man can afford.

Every one is trying to regulate the cost of medical care, and they base their attempt to regulate on the fact that the one thing necessary to human happiness is health. Without health there can be no happiness. When Mark Sullivan wrote his famous book, "Our Times", and endeavored to show what it was that had contributed most to the happiness of mankind in the past fifty years, he gave scientific medicine a place above all the accomplishments of William Jennings Bryan and Theodore Roosevelt, and all the accomplishments of every great leader. He took Pasteur and set him on a pedestal as the man who had done the most for mankind, since he freed mankind from the fear of disease.

Sociologists and philanthropists must realize that the care of the sick must always be primarily a doctor's problem. Without doctors there can be no medical institutions. Without doctors a hospital is merely four walls and some beds and apparatus and a superintendent. The doctors in the institution make it important and famous. If any lay board managing any medical institution does not believe that, let them change the doctors they have to some group which does not represent what scientific medicine represents today. They will find most of their beds idle.

The money spent for medicine does not begin to approach the money that is spent for cigarettes or for cosmetics, and certainly not for rent and food and other items considered equally essential to life. To overcome the difficulties that are inherent in the situation, we must concern ourselves with the problem of making the public realize that scientific medicine is just as important to life and health as food and clothing and shelter. Scientific medicine, being necessary, must be paid for exactly as food and clothing and shelter are paid for.

What then of the relationship of these changing conditions to the principles of ethics of the American Medical Association? These principles have more power than any series of principles of ethics has ever had before, because it is compulsory to subscribe to those principles and to live according to them if a physician wants to remain in respectable medical society. The advantages of remaining in respectable medical society today are such that any physician worthy of the name would not care to practice medicine without contact with his colleagues in the community in which he lives and serves.

There have grown up in the modern practice of medicine several professions accessory to medicine itself. In 1905, about five per cent of the medical profession were practicing exclusively certain specialties. Today there are from twenty-four to twenty-six per cent of the medical profession in the United States who limit themselves exclusively to one organ or to one method of practice, such as surgery or obstetrics. In 1905 there were few nurses in the United States. In 1890 there were graduated, 318 nurses; in 1925 there were graduated 18,000 nurses. The organization which is concerning itself with the regulation of nurses' training schools predicts that in 1950, 65,000 nurses will be graduated from the nurses' training schools of the United States.

There were in the United States about 1900 less than 1,000 hospitals. There are in the United States today about 7,000 hospitals, of which some 6,600 are recognized by the American Medical Association as reputable institutions.

There were in the United States in the hospitals, back in 1915, a little less than one employee for every patient in the hospital. There are in the United States today in the leading hospitals, from two and a half to four employees for every patient in the hospital.

Consider that scientific medicine is practiced in the United States today not only by some 125,000 physicians who are in active practice, but by 1,750,000 physical therapists and nurses and technicians and ambulance drivers and dietitians and orderlies and nondescript healers of some fifty different types of cults. All of these workers are involved in the question of the cost of medical care.

The physicians are the one group of the entire series of almost two millions of people interested in the care of the sick who constantly regulate their fees downward to meet the needs of the patient from a financial point of view. The hospital, the nurse, the ambulance driver, the physical therapy technician, the anesthetist, everyone else in the group, has a fixed fee, but the physician's fee is the one item that is constantly moved downward to meet the patient's needs.

The 125,000 physicians are the only ones in the entire group that are controlled by a definite series of principles of ethics administered through an organization so strong, so capable and so complete in its membership that it actually has force to maintain the tenets that it sets down.

With the coming of group practice, of hospital practice, of industrial practice, of factory practice, of the practice of medicine by corporations of physicians, of the practice of medicine by corporations of laymen who hire physicians on salaries, of the practice of medicine by insurance companies, of the practice of medicine by perhaps twenty-five different types of organizations that have entered into the medical field, a new situation confronts us in which the old rules of etiquette and custom cannot apply. The old ideals and the morals and the old principles of fundamental human relationships will always apply. But in this new situation with clinics and with hospitals. principles must be elaborated, the situation as it is today must be studied, and rules and customs must be modified to meet changing social conditions.

The vast majority of the medical profession have not realized the change that has occurred in the social order, have not realized the new point of view in medical practice due to the advancement of medical science and due to the coming of new methods. The profession is besieged by hasty thought and by cries of consternation.

The public must be educated more and more to the fact that the ideals and morals and principles which guided the medical profession since the beginning of time still obtain. From these there can be no retreat. There can be no retreat from the idea that the interest of the patient is first; there can be no retreat from the idea that there must be a minimum standard of education for all who propose to heal the sick; there can be no retreat from the idea that the physician must be a man of high moral character, trusted to come into a home without debauching it, trusted to come into a home with the idea that the rights of that home and of that family are first. There can be a departure from some of the old conceptions as to who goes in first to a consultation, who has the right to be mentioned in a newspaper, who has the right to give a public lecture on health. The medical profession is probably just as awake as the business men and the lawyers to these changing conditions. When realization is sufficient they will make the necessary advances in their internal legislation to meet and control the changing situations for the benefit of the people.

PROGRESS IN THE TREATMENT OF DIABETES MELLITUS*

C. E. Homan, Jr., M.D., Chattanooga

THIS being the Centennial celebration of this society, the progress made in the treatment of Diabetes Mellitus since its founding should be of interest.

When this association was organized in 1830, the discussion of Diabetes Mellitus in the text-books of that day was brief and consisted chiefly of a discussion of the relative value of drugs, purging, sweats and bleeding. Meat diets were mentioned but there was little recommendation of them. Of the drugs, opium and ipecac were prominently mentioned. The use of opium was, of course, still recommended until comparatively recent times. The use of ipecac interested me because its use in the dosages recommended could produce a rather unpleasant, but quite effective fast day. The average duration of life was from two to four years, after the diagnosis of the disease.

Soon after 1830 a great amount of interest began to be taken in Diabetes and by this association's fiftieth anniversary in 1880 a vast literature had accumulated on the subject. There were some notable works reported during this period. Claude Bernard discovered glycogen in the liver. Schuttzen had suggested that glycogen was oxidized in the capillaries to glycerin and lactic acid, by the aid of a ferment. If this ferment was diminished or absent glycogen could not be split and oxidized and glycosuria resulted. Niemeyer, Senator, Lescaut and others had called attention to the frequency of a diseased pancreas in Diabetes and attributed to it an important place in causation; although it was generally considered to be a disease of the liver.

By this time diet was now rightfully accorded first place in the treatment. They saw the futility of attempting to keep a patient on a carbohydrate free diet, as a meat diet; and the patient was now put on a diet of foods of low or no carbohydrate content, the foods of higher carbohydrate value being eliminated until the patient became sugar free.

During this period there came to prominence a number of special diets. The first one of these was the skimmed milk diet of Dr. A. Scott Donkin in 1868. This consisted in giving from three to four quarts of skimmed milk a day and was effective in reducing sugar in the urine in a great many cases. He believed this due to the fact that the Diabetic could utilize lactose. We now know that his favorable results were due to the low calorie content of skimmed milk. The other diets which resembled this were the rice diet, potato diet and the oat meal diet.

Richardson, a London physician, himself a diabetic, demonstrated again the value of exercise in reducing glycosuria.

As a result of these advances the elderly diabetic lived a great deal longer. Diabetes in patients under 20 years of age was as a rule still fatal in from two to four years and diabetic coma considered as a condition which preceded death.

In the past fifty years our knowledge of Diabetes Mellitus has made great strides. Minkowski and Von Mering, in 1889, reported their experiments on extirpation of the pancreas, their results were confirmed and following the publications of Opie in 1902, a deficiency in that part of the pancreas consisting of the island of Langerhans were generally accepted as the cause of Diabetes Mellitus. Janney in 1903 suggested that the marked restriction in carbohydrate, in vogue at that time, was useless, for when markedly reduced glucose was formed from proteins and fats, and he believed that a marked restriction of carbohydrate was not advisable. About this time quantitative diets were beginning to come into use, and their use was given a great impetus by the publication in 1906 of Bulletin No. 28, Chemical Composition of the American Food Materials. During this period there was some prolongation of life, but there was no great improvement until Allin, on the basis of experimental works started in 1912, showed quite conclusively that a Diabetic did much better when under-nourished.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

To low calorie diet developed by Allin enabled us, for the first time, to prolong the Diabetic's life to any appreciable extent. Acidosis, the too frequent result of the diet and fasting then in use, was greatly reduced by Joslin's rules for fasting, which briefly consisted of first omitting fat and protein in preparation for the fast.

These improvements in treatment necessitated keeping the severe diabetics pitifully under-nourished, but they lived longer, and a fair number of cases of coma recovered. However, we were still unable to foretell the effect of any certain diet on acidosis. This was studied by a number of men, among them Schaffer, and in 1921 Woodyatt suggested, on the basis of his studies that since carbohydrates, proteins and fats, when metabolized formed glucose and fatty acids, it would eliminate one variable if all diets were reduced to their glucose and fatty acid content. In this calculation considering carbohydrate as yielding 100 per cent glucose, protein 58 per cent glucose and 46 per cent fatty acid, fat yielding 10 per cent glucose and 90 per cent fatty acid. After conversion in this manner, if the diet contained one molecule of glucose for each molecule of fatty acid, the laboratory and clinical studies indicated that acidosis would not develop. This proved to be true. Woodyatt also believed that fasting was of little value and could in a great measure be eliminated by the use of a high-fat diet, provided they contained one molecule of glucose for each one of fatty acid. The high-fat diet had been used with some by Nerberg and Marsh.

In 1921 we were then in a position to give a Diabetic a maintenance diet, if his endogenous insulin metabolized carbohydrate enough to furnish one gram of glucose for each 1.5 grams of the fatty acid necessary to complete the required number of calories. The patient who had this amount of tolerance could be expected to live a long and approximately normal life, barring infections or excesses, which reduced his tolerance. Those with less tolerance were forced by under-nutrition to keep their calorie needs proportionately lowered to avoid acidosis. Coma, while not as dangerous as formerly, was still prominent as a cause of death.

In 1922 those patients with very low tolerance, who by living on sub-maintenance diets had remained alive, were quite miraculously able then to take maintenance diets. By adding to their insufficient supper of endogenous insulin, the exogenous insulin perfected by Banting and Best, their tolerance could be increased as much as was necessary to supply the requirements of a maintenance diet. After study with insulin it was also found that should coma occur by the use of insulin, it could be readily relieved.

So after the advent of insulin which enabled all diabetics to take a maintenance diet and when promptly used relieved coma, there was no real reason why a Diabetic shouldn't live out his life expectancy as a normal individual except that he must diet and take insulin if necessary. We soon had a very rude awakening, for the general death rate was not reduced. Further study showed that there was some reduction in the younger age groups, but an increase in the older groups. This in a measure was due to the more frequent recognition of glycosuria. But on study of the statistics of men particularly interested in Diabetes, it was apparent that the high death rate was due to two causes.

First: Diabetics lived long enough to develop arteriosclerosis and its complications, the incidence of which among Diabetics is very high.

At the present time the prevention of arteriosclerosis is occupying the attention of all workers in Diabetes. There are three groups with divergent opinions. Joslin believes its prevention is best assured by a limitation of foods rich in cholesteral; Newberg, that limitation of total calories is the solution, and Sansum hopes to prevent it with his high carbohydrate alkaline ash diets. When the patients of these men are checked several years from now the problem of arteriosclerosis may not be so troublesome.

The failure to receive advantage of our present knowledge is either due to improperly directed or improperly taken treatment.

The writing of a diet prescription is extremely simple and there should be no excuse for a patient failing to get one. The first diet should contain thirty calories for each kilogram of body weight, if more than 10 per cent under weight and more, if over weight less. The amount of carbohydrate used is largely a matter of choice; my first diet as a rule contains 80 grams of carbohydrate. The protein requirements are from two-thirds to one gram of protein for each kilogram. An illustration shows the simplicity of the scheme. We have an individual weighing 132 pounds or 60 kilograms. He is of average weight, so he will receive 30 calories for each kilogram, or 1,800 calories. He receives four calories from each of the 80 grams of carbohydrate and each of the 60 grams of protein, allowing one gram for each kilogram. The carbohydrate and protein furnish them 560 calories, leaving 1,240 calories to be furnished by fat; dividing by 9 the calories in each gram of fat, he will need 138 grams of fat. After several days on this diet the carbohydrate is raised or lowered, depending on the amount of sugar in the urine. If small amount of sugar is present the carbohydrate is lowered. If large amount of sugar are voided the decision as to the use of insulin must be made. Personally, if the tolerance is 70 grams I rarely use insulin; if much less I insist on its use, because I feel that a diet contains 70 or more grams except for omission of very high carbohydrate foods, closely approaches the normal diet and consequently is more likely to be followed over long periods of time. It also furnishes a margin of safety to take care of temporary reductions in tolerance and practically all Diabetes in adults can take 70 grams of carbohydrate without insulin.

The above scheme is so simple that I would hesitate to give it were it not for the fact that numberless Diabetics fail to receive even this much, which is skeletal and could be enlarged to take care of numerous additional points, but if all Diabetics received the advantages of even these simple rules there would be far less Diabetic death.

The translation of this formula, Carbohydrate 80, Protein 60, Fat 138, into three meals, is considered by many physicians a difficult task, but with any of the Diabetic Manuals, and a little time, it can be hastily learned. The physician who can't do it and still treats Diabetics is quite likely to suffer a great deal of embarrassment, for he is certain in the course of time to run across some child, ten or twelve years old, who does it easily.

Of those patients who fail to follow treatment, a small number of that type of patients who would refuse to follow any good advice. But the majority of patients failing to follow directions, for one of the following reasons.

Quite often patients do not understand directions given. In the large centers this is quite well handled by the schools for the Diabetic, and whenever possible the patient should receive a course of instruction in one of these schools; but for those less fortunate individuals, a fixed diet which allows set amounts of the 3 per cent vegetables, 6 per cent vegetables, and 10 per cent fruits, and other foods, will serve quite satisfactorily until such time as they can teach themselves to figure diets, using one of the Diabetic Manuals as a text.

A certain number of individuals discontinue treatment because of the monotony of the diet. If the carbohydrate allowance is from 70 to 100 grams, quite a varied diet can be arranged, particularly if the patient is able to calculate his own diet. I feel that at the present time with insulin as readily available as it now is, that we are imposing an undue hardship on patients by trying to restrict the carbohydrate intake. Once the patient has taken insulin it is very rare for one to choose the low carbohydrate intake and no insulin. The question of cost of insulin is not as great as might be supposed, for diets containing 80 grams of carbohydrate are generally less expensive and more easily obtained than one containing 50 grams.

The advice is frequently given to have the Diabetic first to omit the foods very rich in carbohydrate and if he becomes sugar free the use of quantitative diet is not necessary; this particularly in elderly patients. I feel that all Diabetics, regardless of the mildness of the disease or age, should be put on a quantitative diet, for I believe that the patient not only is much less likely to break over if this is done, but it is just as important that he receives as much carbohydrate as his tolerance will allow. It is also of some value to the physician to know the tolerance of that patient in grams. Scales are invaluable when starting on a quantitative diet. Later they may be dispensed with, but occasionally the patient should weigh his food, for it is quite common to find a portion of food which originally weighed 100 grams growing to 150 grams when estimated.

The progress made in the treatment of Diabetes in the past few years has been great. It is to be hoped that in the next few years all Diabetics will receive the advantages afforded by our present-day knowledge, which is founded on the works of interested physicians during the past century.

DISCUSSION

DR. R. C. DERIVAUX (Nashville): Dr. Homan's paper is appropriate and timely. He has summarized the advances of the last century in impressive fashion, and what he has read emphasizes the fact that in but few other diseases has progress been so helpful to both doctor and patient as in the case of diabetes.

As has been pointed out, we possess information today which makes it possible to speak with great assurance to our diabetic patients. We can tell them that with proper guidance and with vigilant cooperation, they have little to fear from their condition which heretofore had carried with it a more than 50 per cent mortality from coma. As physicians we may rejoice in our ability to prevent coma in the majority of instances, and in our possession of a specific for its treatment should it occur. We can assure them that their condition is one which medicine does not pretend to treat, but that the question is primarily one of management; I have found the use of the term "management" rather than "treatment" of great advantage in teaching, of both students and patients, and has much to recommend it; after all, we are simply training a patient to live within the limits of a damaged capacity and the more clearly this can be impressed upon his attention, the more logical his dietary and other schedules become.

Dr. Homan referred to some of the historical landmarks. Time permitting, appreciative tribute should be paid to many who have added to our knowledge as the century passed; suffice it here to mention Allen, who taught us in 1915 that regulation of the total metabolism was indispensable in the management of diabetes, and that the doctor who attempted to treat his patients on a basis of carbohydrate restriction alone is headed for disaster just as is his colleague who feels that qualitative restrictions are all that is necessary.

Equally are we indebted to Joslin for his monumental work in teaching both doctors and patients the importance of persistent systematic effort, and for his simplification of the complexities of dietary regulation.

Insulin must be mentioned as eminent among the achievements of the last 100 years. Its use has been well learned, but there are still those who expect it to do everything and doctors still say, "I don't want to be bothered with this question of diet; I want my patient to eat as he likes," and then trust to Insulin to carry the load; there is no worse attitude possible and there still remains work to do in teaching the fundamental importance of dietary regulation on a quantitative basis, whether Insulin is to be employed or not.

Our hopes for the future are bright; search is in progress in many quarters for something which, when given by mouth, will aid or possibly replace Insulin. It may be helpful to point out that while there are available sundry tablets and pills whose merits are extravagantly extolled in leaflets and by detail men, we have as yet absolutely nothing of proven merit.

Dr. Homan has written an excellent summary of what has been accomplished and his essay emphasizes the basic principles upon which our present views of diabetic management are founded. Admittedly, much remains to be done, but as has been said, we are able to advise our patients with a greater confidence than ever before and by employing the means that we already possess, their comforts and usefulness may be maintained almost parallel with those of their more normal associates.

CLOSING DISCUSSION

DR. C. E. HOMAN (Chattanooga): I want to thank Dr. Derivaux for his discussion. There were one or two things that he said that I think are of particular value. One was his statement about the management of the Diabetic. That is certainly what the treatment of a Diabetic is, and I get a good deal of cooperation from my Diabetics explaining it in this way: They have a disease which limits none of their activities except their eating, and the food that they must avoid is that type of food which is harmful, or at least of no particular value to a well person. Young girls particularly are very sensitive about going to a bridge party, drinking a clear cup of coffee or tea while the others are eating the usual indigestibles served at these affairs. If you explain to them that they are doing themselves a service by doing without it and the other girls are harming themselves by taking it, and try to get them to feel sorry for the other ones that are eating, you get along with those patients a great deal better, particularly in the young girls.

He spoke of various nostrums advertised for the treatment of Diabetes. Every Diabetic, as soon as his friends find out he has Diabetes, is offered fifteen or twenty sure-cures for Diabetes.

The A. M. A. has been of great help to me because I insist upon my patients bringing me the names of all the remedies that are suggested, and I then write to the A. M. A. for an analysis of them. Then I go to the drug store and ask what the contents of those things cost. As a rule a bottle of tablets sells for five or seven dollars. I tell the patient that he can go to the drug store and buy the same thing for 25 cents; when they are told that, the quackeries are, as a rule, quickly forgotten.

I think we ought to use our A. M. A. service more in that respect, because it is a big help.

ONE HUNDRED YEARS OF THE TENNESSEE STATE MEDICAL ASSOCIATION*

PHILIP M. HAMER, A.B., M.A., PH.D.

Professor of History in the University of Tennessee, Author of the History of the Tennessee State Medical Association, Knoxville, Tennessee.

I SPEAK to you this evening, in the capacity of an exponent of what has been called the new history. This history is not the history that many of you studied when you were attending grammar school and high school and even college. It is not content to present to the curious a mere chronicling of the year by year annals of remarkable but unrelated events; it is not greatly interested in the genealogy of royal families or in court intrigues, the birth of princes and the death of kings; it increasingly relegates to the background accounts of the marching and countermarching of armies; it does not accept an older definition of itself, that "history is past politics." The new history is interested in the whole of man's past, in so far as that past has made the present. It is interested not only in politics and wars, but in art and literature and music and commerce and agriculture and science and religion and thought. It seeks to trace the development of all those processes whereby our present-day highly complicated civilization has come into being.

It is accordingly much interested in the history of medicine, for modern medicine, by lengthening the span of human life, by releasing man in increasing measure from the age old enemy, disease, by giving to man an enlarged measure of abundant health, has been of fundamental importance in making possible this modern civilization in which we take such pride. In other words, the history of the organization that now bears the name of the Tennessee State Medical Association is a history that should be of interest to a wider audience than its members. It is a part, and an important part, of the history of the State of Tennessee. From another point of view it is a part of the history of modern medicine, and as such, it is of interest and importance to me, though I am not a physician, and in greater of less degree, I hope, to all who are interested in the history of their commonwealth, their nation, their world civilization.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

The heroes of this new history, I may add by way of further introduction, are not politicians and warriors, but builders of civilization. The great men of the past were not only the Alexanders the Great, the Caesars, and the Napoleons, but Hippocrates, and Harvey, and Jenner, and Pasteur, and Lister.

In the history of Tennessee the new historian names Samuel Doak, Samuel Carrick, and Philip Lindsley, minister of the gospel and educators, James G. M. Ramsey and John Haywood, historians, Paul F. Eve and William T. Briggs, surgeons, J. Berrien Lindsley, propagandist of public health and public education, Gerard Troost, geologist, Elihu Embree, abolitionist, and Mary Murfree, authoress, as at least the equals of William Blount, politician and land speculator, John Sevier, Indian fighter and governor, and Andrew Jackson, warrior, duelist, and president. He teaches that the men who gave their lives in combat against the Indians, or at New Orleans, or at Gettysburg, or along the Hindenburg line, were no braver, for example, than those physicians who in 1878 when yellow fever desolated Memphis and most of the populace of that stricken city fled, when fear-ridden towns maintained a shot-gun quarantine against all strangers, volunteered to risk their lives in combat against a deadly disease. No compulsion, moral or otherwise, no stimulus of fear or blood-lust or hatred sent them over the top. There was great need for aid to suffering humanity. There was great danger. From all parts of the state and the United States they volunteered. In the mosquito, unknown carrier of the disease, they found an enemy as dangerous as ever was the tomahawk, or rifle, or machine gun. Many of them died. They were volunteers of the Volunteer State.

So much by way of introduction. And now let us turn more particularly to the history of this association.

It was a hundred years ago that a small group of Tennessee's most progressive physicians met in Nashville to organize the Medical Society of Tennessee. Let us attempt briefly to picture conditions as they were in that distant age.

Nashville, the capital of the state, was the largest city in Tennessee and boasted a population of 5,566. The total population of Tennessee was less than 700,000. Men still traveled by horse-back, or by stage. Steamboats had recently begun to puff up and down the rivers, but the railroad, the telegraph, the telephone and the motor car were unknown. Andrew Jackson, the idol of the people, was president of the United States.

As regards medicine, when the pioneers had come to settle Tennessee they had brought with them the common heritage of the white man's diseases and likewise the common heritage of his knowledge and his superstitions as to how these diseases should be treated. Medical knowledge, in comparison with that of the present, was exceedingly primitive. Anesthetics, antiseptics, the germ theory of disease, were unknown. One is appalled at evidences of the most elementary rules of modern sanitation. The common housefly was looked upon as a friendly scavanger. The mosquito was a harmless pest. In cities and towns streets were unpaved and there was no provision for sewerage. Epidemic diseases decimated the population and spread terror throughout the country. Smallpox killed passengers in John Donelson's party bound for Nashville from East Tennessee in 1780 and was epidemic as late of 1883 in Chattanooga. Influenza, typhoid, and cholera were at various times epidemic. When physicians knew so little about this latter pestilence as to say that its existence was due altogether "to a deficiency of ozone in the atmosphere," what could be expected of the population of Jonesborough but to do as one of their physicians described when he wrote: "The major part of our population thereupon incontinently betook themselves to various places of retreat."

Many of the settlers were dependent upon their own ministration when they became ill, and, as evidenced by John Sevier's diary, men seem to have exchanged prescriptions for rheumatism and fever much as women exchanged receipts for bread and cake. As civilization advanced into the wilderness, this practice of ministering to the ills of one's self and one's family, without the intervention of a physician, probably decreased; or if perhaps it did not decrease, it at least became more sophisticated. A number of medical books were written for the use of the laymen. One of these was published in Chattanooga in 1846 with the title, *The Cherokee Physician or Indian Guide to Health, as given by Richard Foreman, a Cherokee doctor.* Another, perhaps one of the most famous of its day, was succintly described in its title page:

> "Gunn's Domestic Medicine, or Poor Man's Friend, in the hours of affliction, pain and sickness. This book points out in plain language, free from doctors' terms, the diseases of men, women, and children, and the latest and most approved means in their cure, and is expressly written for the use of families in the western and southern states. It also contains descriptions of the medical roots and herbs of the western and southern country, and how they are to be used in the cure of diseases; arranged on a new and simple plan, by which the practice of medicine is reduced to principles of common sense."

For the gullible, medicines that were guaranteed to cure every ill might be purchased at the cross-roads store. Witness, for example, the advertisement in *Wilson's Knoxville Gazette,* in 1811, of the "Original Family Medicines" prepared by Michael Lee and Company of Baltimore: "Lee's Elixir. A certain remedy for colds, coughs or asthma, and particularly the whooping cough . . . Lee's Essence of Mustard. So well known for the cure of rheumatism, gout, palsy, sprains, etc. Lee's Grand Restorative . . . unequalled in the cure of nervous disorders, consumption, lowness of spirits . . . Lee's Sovereign Ointment for the itch . . . warranted an infallible remedy at one application."

Into Tennessee, of course, there came at an early period some physicians who had received a medical education as good as could normally be obtained in this country. They had studied in the office of some local physician and had attended two courses of lectures at some medical school. They had learned from books and from the mouths of great physicians. But their practical study of anatomy had been small and their clinical experience limited. Of laboratory instruction in the sciences they, of course, had had nothing.

The men who had received the M.D. degree, limited though their medical education was in comparison with present day standards, constituted the small minority of the medical professions of Tennessee. In just what proportion they were to the whole number of men who attempted to practice medicine it is probably impossible to know. Some light is thrown upon the situation, however, by a partial and informal census that was made by Dr. Frank A. Ramsey about 1850. In a group of East Tennessee counties Dr. Ramsey found that there were 201 physicians in a population of 164,000. This was in the ratio of one physician to every 810 of the population. Of these 201 physicians thirty-five were graduates of medical schols, forty-two had attended one course of lectures at a medical school but had not graduated, ninety-five "professed to be 'regulars' but had never received instructions from any other source than reading, which for the most part was limited, "twenty-seven were described as "botanic and steamers and generally most deplorably ignorant," and two were homeopaths.

Not only were the ignorant men within the profession who called themselves regulars a cause of complaint by the better educated physicians. Irregulars, quacks, were repeatedly denounced by those who desired to see improvement in the practice of medicine in Tennessee. The state was filled with "swarms of vile and ignorant pretenders, who under the various denominations of 'Steam Doctors', 'Faith Doctors', 'Root Doctors', 'Cancer Doctors', 'Negro Doctors', 'Doctors by Nature', and several other kinds, found it no difficult task to impose upon the ignorance and credulity of a very large class of society." Of this group, for example, were two "Indian Doctors," near Knoxville in 1837 who advertised in the *Knoxville Register* that they were "graduates of the celebrated Indian Doctor, John Westerfield of Kentucky," that they professed to cure "Consumption, Dyspepsia, Dropsy, Cancers, Chronic affection of the Bowels, Rheumatic pains, Palsy, Gravel, Derangement, Fits, Deafness, King's Evil, and Female complaints of all kinds," that in fact they were able to cure any disease "if taken in time . . ."

It is possible, of course, to over-emphasize the ignorance and quackery of a century ago. One should not forget, as has previously been stated, that there were physicians in Tennessee who were intelligent and honest and well educated. It was from this group, with the hope of improving conditions regarding the practice of medicine within the state, that there developed the movement for the organization of a state medical society.

The State Legislature, accordingly, in January, 1830, passed an act for the incorporation of the Medical Society of Tennessee. It named the charter members of this society and the names of one hundred and fifty-one of the ablest physicians of Tennessee were upon the list. Among these charter members were a number of men of prominence in the history of Tennessee. There was Felix Robertson, son of General James Robertson; Samuel Hogg, surgeon in the Greek War and the Battle of New Orleans; James Overton, prominent advocate in later years of the building of the Nashville and Chattanooga Railroad; Lunsford P. Yandell, who was to be a teacher of medicine at Translyvania, Louisville and Memphis, and editor of several medical periodicals; William H. Deaderick who had won national and international fame for his excisions of a portion of the inferior maxilla in 1810; James G. M. Ramsey, author of the *Annals of Tennessee;* and Samuel B. Cunningham, one of the most noted surgeons of East Tennessee and first president of the East Tennessee and Virginia Railroad.

On May 3, 1830, forty-seven of these charter members representing all sections of the state, met in Nashville, to organize the society. Considering the primitive conditions of travel of a century ago, this was a large attendance. The meeting was characterized by enthusiasm. One hundred and twenty-one new members were elected. James Roane of Nashville, son of Tennessee's second governor, was chosen president. Other officers were elected. By-laws and a code of ethics were adopted. The society thus began what its founders hoped would be a vigorous and useful life.

Unfortunately, however, the society's charter, in the opinion of many, was defective. The chief purpose of the organization, many thought, was to regulate the practice of medicine and suppress quackery. The society's charter had given to it the power to examine candidates and grant licenses to those who should be found to be properly qualified, but the law did not require that only those who had such licenses could practice. Anyone who desired to could practice medicine, whatever his qualifications or lack of qualifications. The natural result was that few men applied to the society for licenses. Attempts were made to prohibit practice except by the society's licentiates, but these attempts were failures. As a consequence, many of the members of the Medical Society of Tennessee lost interest.

The first few meetings of the society were well attended, but by 1835 the enthusiasm of the earlier meetings had been dissipated. It was clear that there was little hope that the legislature would give to the society the power to regulate the practice of medicine, and only thirty-eight members, old and new, attended the annual meeting. In the remaining years before the Civil War attendance was numbered in the twenties and thirties and occasionally fell into the tens. The state society become in fact, though not in name, a Middle Tennessee society. During the first thirty-one years of its existence it met only in Nashville and in Murfreesboro. The Nashville membership naturally formed a large proportion of the attendance at the Nashville meetings. There were some other faithful attendants, from Rutherford County particularly, and from the other counties that adjoined Davidson. It was only on rare occasions that anyone was present from East Tennessee or from West Tennessee or even from those portions of Middle Tennessee most remote from Nashville.

It seems remarkable, in fact, that the society did not cease to exist. That it did not was due to the fact that it had among its members a number of physicians who believed that despite its lack of power to regulate the practice of medicine it could promote the progress of medicine in Tennessee by stimulating a spirit of inquiry after knowledge, by maintaining a high standard of medical ethics, and by promoting a spirit of friendly intercourse and a discussion of professional experiences and problems among its members.

The work of the society was varied. It encouraged its members to read essays and report cases. It listened to lengthy essays on medical topography, that is, the relationship of climate, rainfall, the soil, etc., to disease. It is perhaps enlightening to note that the prize winner, Dr. James Overton, in the reading of his paper consumed no less than two and a half hours.

The society was much interested in attempts to secure the passage of certain laws by the legislature. It was unsuccessful in attempts to secure a licensing law. It urged, but did not secure, legislation for the suppression of quackery and patent medicines. It failed to secure the enactment of a vital statistics law. It remonstrated, with little success, against the law that made it a criminal offense to disinter dead bodies for purposes of dissection. In all of these matters the society, an enlightened minority, was in advance of public opinion.

In the late forties there came a development that was ultimately to give strength and encouragement to the Medical Society of Tennessee, to other state and local medical societies, and to the whole medical profession. This was the organization of the American Medical Association, and in this the Tennessee society had her part. Her delegate, Dr. William A. Cheatham, attended the medical convention in New York in 1846 that resolved to establish the American Medical Association. Her president, Dr. A. E. Buchanan, attended the organization meeting in the following year and was elected to the vice-presidency of the national organization. The Tennessee society promptly approved of the association and adopted its code of ethics.

In the early fifties another development that was to mean much to the Medical Society of Tennessee and to the medical profession of the state generally was the established of the Medical Department of the University of Nashville. This institution brought to Tennessee three physicians who were to become men of national reputation in their profession and presidents of the American Medical Association, Drs. Paul F. Eve, William T. Briggs, and William K. Bowling. Nashville rapidly became a medical center, second only to Philadelphia, and the state medical society, so intimately associated with Nashville, took on new life.

In 1861 there began the Civil War. The society met in this year in Murfreesboro, but its meeting for 1862 was never held. Its members in large numbers were serving the Confederacy. Tennessee was a battlefield. It was not until 1866, when war had ended at last, that the physicians of Tennessee could take up again the work of organizing their profession into an instrument that would serve both them and their public.

In the period since the Civil War the society has been able to become what its founders desired it to be, the organization of all of the reputable physicians of the state. It has not been able to achieve this ideal without effort. Only as a result of the continued efforts of its enlightened leaders has it become the powerful organization that it is today.

Among the first evidences of the growing state-wide character of the society was the fact that in 1871 it met for the first time after the Civil War in another town than Nashville. In this year it assembeld for a two day session in the Episcopal church in Pulaski. Three years later, in 1874, for the first time in its history it ventured to meet outside of Middle Tennessee. It met in Chattanooga. In 1878 it met in Memphis for its first meeting in West Tennessee, and since that time it has met periodically in each of these major divisions of the state.

In its choice of officers, also, it ceased to be a local society. In 1869 it amended its constitution to provide for the election of a vice-president from each of the three sections of the state. It began the election of presidents from other places than Nashville.

As a result of these policies, which have been continued to this day, the membership of the society and attendance upon its meetings began to grow. In 1875, ten years after the Civil War, there were only 159 members, and only thirty-three of these attended the annual meeting. For the next decade, however, membership and attendance remained fairly stationary. It was evident that under its existing organization the Medical Society of Tennessee was making only slow progress.

A movement for reorganization was begun in 1896 by one to whom this association owes a debt of gratitude for faithful and efficient service—Dr. G. G. Savage. It was as a result of his suggestion that in 1902 a new constitution, providing for a complete reorganization, was adopted, and the medical society became the Tennessee State Medical Association. It was also as a result of the prolonged efforts of Dr. Savage that sometime later the association began the publication of its journal.

According to the provisions of the new constitution, membership in the association could be secured only through membership in a county medical society, and only through membership in the state association could membership in the American Medical Association be obtained. Vigorous action for the organization of county societies followed the adoption of the new constitution. The results were immediately apparent. In 1903 there were 974 members, in 1911 there were 1,100, and in 1928 there were 1,662. In this last mentioned year the association numbered on its roll of membership almost two-thirds of all active white physicians within the state. As the centennial year approached there were relatively few of the eligible physicians who were not members, and certainly the great majority of the "elite," to use the term of a hundred years ago, were to be found within the association.

It was not only because of its great growth in membership that the Tennessee State Medical Association earned the right to celebrate with pride the completion of its first one hundred years of life. An important phase of its work has been the reading and discussing of papers that have served to help keep its members abreast of the rapid advances that have characterized the profession in recent years. It was a far cry from the declaration of Dr. Samuel Hogg in 1815 that he would not let his patients die of influenza, "he would bleed them to death, rather," to that of Dr. J. B. Murfree's advocacy of conservative medicine: "We carefully watch our patients, combatting any condition that interferes with the vital functions, supporting the general system by proper nutritive material, relieving pains by anodynes, and placing the patient in that condition which most nearly approximates health." It is a far cry also from the days when Dr. William P. Chester was not only John Sevier's physician but the keeper of a tavern and an apothecary shop; when Samuel Carrick preached the gospel, taught school, and practiced medicine; when the only doctor in Nashville was a horse doctor; to the modern days of specialization and specialties within specialites—the growth of which is increasingly evidenced in the papers of the association. So also, one who runs may read the increasing influence of the new sciences, particularly bacteriology, upon medicine in Tennessee.

In the field of medical legislation the association has been increasingly active and successful in the period of its history since the Civil War. It was largely as a result of its persistent efforts, through such members as E. M. Wight and J. Berrien Lindsley, that Tennessee's board of health was established in 1877. With this board the association has cooperated in the development of a state-wide program of public health. It was as a result of the efforts of the association that in 1889 Tennessee's first law for the regulation of the practice of medicine was enacted by a reluctant legislature. In the development of higher standards of medical education the association has given its assistance. Increasingly in recent years its voice has been listened to as the voice of educated medicine in Tennessee.

Finally, with the American Medical Association the Tennessee association has maintained cordial relations, and has given to it five of its president—Paul F. Eve, William K. Bowling, William T. Briggs, John A. Witherspoon, and W. D. Haggard. On the past one hundred years of its existence it may look back with pride. To the next hundred years it may look forward in confident anticipation of continued service to medicine and to the people of Tennessee.

The Centennial History of the Tennessee State Medical Association 1830-1930

By Philip M. Hamer, Ph.D.

No Doctor's Library will be Complete without this Volume. Read the Table of Contents and we know you will order at once.

Price, Three Dollars

Order from

Tennessee State Medical Association

510 Doctors' Building, Nashville

TABLE OF CONTENTS

PART I

THE HISTORY OF THE TENNESSEE STATE MEDICAL ASSOCIATION, 1830-1930

Philip M. Hamer, Ph.D.

Chapter Page
I. The Organization of the Medical Society of Tennessee 17
II. Thirty Years of Ante-Bellum History, 1831-1861 31
III. Reorganization and Growth, 1866-1876 59
IV. Continued Growth and the Promotion of State Medicine, 1876-1889 73
V. The Society Becomes the Tennessee State Medical Association, 1889-1902 104
VI. The Association Completes a Century of Life, 1902-1930 123
VII. Sketches of the Lives of Presidents and Other Officers of the Association 135

PART II

CONTRIBUTIONS TO THE HISTORY OF MEDICINE, WITH PARTICULAR REFERENCE TO TENNESSEE

I. Pioneer Physicians of East Tennessee. *By S. R. Miller, M.D.* 217
II. Pioneer Physicians of West Tennessee. *By A. F. Cooper, M.D.* 244
III. The Progress of Internal Medicine Since 1830. *By W. H. Witt, M.D.* 248
IV. The Century's Progress in Regional Surgery. *By Battle Malone, M.D.* 276
V. A Brief History of Bacteriology and Microbiology for the Past One Hundred Years, 1830-1930. *By William Litterer, M.D.* 311
Chapter Page
VI. Pioneers in Pathology and Bacteriology in Tennessee. *By William Litterer, M.D.* 344
VII. The History of Medical Education in Tennessee. *By Otis S. Warr, M.D.* 354
VIII. The History of the Tennessee State Health Organization. *By W. J. Breeding, M.D.* 409
IX. The Care of the Insane in Tennessee. *By W. S. Farmer, M.D.* 448
X. Medical Periodicals in Tennessee Before the Civil War. *By Philip M. Hamer, Ph.D.* 452
XI. Local and Sectional Medical Organizations 468
XII. The Medical Profession of Tennessee in the World War. *By H. H. Shoulders, M.D.* 492

PART III

DOCUMENTS AND COMPILATIONS

I. An Act to Incorporate a Medical Society in the State of Tennessee, 1830 507
II. By-Laws of the Medical Society of Tennessee, 1830 511
III. Code of Ethics of the Medical Society of Tennessee, 1830 515
IV. Charter Members of the Medical Society of Tennessee, 1830 519
V. List of Members of the Society, 1830-1861 522
VI. Officers of the Tennessee State Medical Association, 1830-1930 529
VII. A Partial List of Essays and Addresses Presented Before the Tennessee State Medical Association, 1830-1930 542
VIII. Members of the Tennessee State Medical Association, December 31, 1929 551
Index 573

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1930

EDITORIAL

THE PRINCIPLES OF MEDICAL ETHICS

In becoming a practicing physician a person assumes under the Code of Ethics three distinct obligations:

1. An obligation to his patient.
2. An obligation to other physicians.
3. An obligation to the profession at large, and to the public at large.

One of the obligations to the profession at large is to conduct himself in accord with the ideals of medicine.

Section 1, Chapter 1, of the Principles of Medical Ethics reads as follows:

> "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession, an individual assumes an obligation to conduct himself in accord with its ideals."

Every now and then someone ventures to assert that the code of ethics is antiquated, but we do not believe that anyone can ever carefully study the provisions of the code without becoming impressed with their wisdom.

Concerning the obligation to the patient. Once a doctor is in charge of a patient it is his duty to render the best service of which he is capable. He is not required to render service more expertly than can be expected of the average doctor of his community.

The patient has certain rights which it is the duty of the doctor to respect. First, he has the right to expect reasonable service. Second, he has the right to change doctors at any time he may choose to do so, provided he proceeds in the proper manner. For example, Dr. A. is in attendance on a patient. The patient wishes to have Dr. B. attend him. Under the provisions of the code of ethics it is the duty of the patient to advise Dr. A. of his wishes. It is then the duty of Dr. A. to meet Dr. B. in consultation on the case and then retire.

Dr. A. has no ethical ground for offense against Dr. B. nor against the patient. He is duty bound to respect the right of the patient to have the physician he wants and must respect the right of Dr. B. to attend the patient who wishes his services.

If Dr. B. has entered into unethical practice in bringing about a desire on the part of the patient to have him in attendance, he is guilty of unethical conduct on that ground, but he has not committed a breach of ethics in accepting a call under the circumstances set out above.

Dr. B. may refuse the call if he wishes to do so. He can refuse to take charge of the case if he wishes to do so, but if he does so it is on personal grounds—not on ethical grounds. Lay-people should never be left under the impression that there is any provision in the code of ethics which operates to defeat their rights in this regard.

Dr. B. may give a reason for declining the case or he may decline the case without giving a reason, but he cannot decline it on ethical ground when there is no such ethical ground to stand on.

The code of ethics has come into some disrepute with some lay-people largely because of their failure to understand these facts.

Lay-people often sneakingly attempt to change doctors without doing so in the proper manner. This is due again to their failure to understand their rights and privileges under the code.

It may be that the influence of the code of medical ethics is winning to some extent, though we doubt it.

The code is not written as a legislative statute to cover in detail every circumstance that may arise in the course of medical practice. In it are found the fundamental principles that should govern.

A CHANGING ATTITUDE

In the October issue of the Ladies' Home Journal there appears an article under the heading, "The High Cost of Being Sick". The author is Mr. Frederick L. Collins.

This heading alone denotes a marked change in the minds of many who are honestly investigating or just dabbling with this big question of the cost of being sick.

One or two years ago articles appeared in lay magazines under such headings as "The High Cost of Medical Care". The impression one gathered from reading much of the literature was that medical care costs too much and doctors are entirely to blame.

It is interesting to observe that this particular author has broadened the scope of his discussion to cover the entire cost of being sick, of which costs medical fees constitute a minor part.

We are beginning to see evidences of progress. There is no more striking evidence to be found than in this particular discussion by Mr. Collins. When the subject is approached in this way there is a possibility of some good coming from investigation. When the subject is approached from a biased attitude no good can come from investigation. The conclusions will conform to the biased preconceived ideas of the investigators.

There is no doubt but that doctors could lesson their overhead costs to some extent and pass the saving on to the public by more perfect organization of the practice. This is true of every business. This saving to the public would amount to little, however, as compared with all the costs of being sick.

SOUTHERN MEDICAL SOCIETY MEETING AT LOUISVILLE, KENTUCKY

We are sure most of our readers have read in their Southern Medical Journal the plans for the Louisville meeting. We know all of our readers have read the ads we carried last month and this. We believe many of our members are planning to attend the meeting. If there be any who have not decided to go, we know they will be persuaded by the letter we received a few days ago. So read it and secure your hotel reservations.

"Louisville, Ky., Sept. 23, 1930.

"To the Members of the Tennessee State Medical Association:

"The Jefferson County Medical Society, which will be host to the Southern Medical Association during its annual meeting in Louisville, Ky., November 11th to 14th, 1930, desires cordially to invite you to this event which will be the most outstanding medical convention ever assembled in Louisville.

"There are many reasons, too numerous to mention, why the rank and file of the medical profession in the South, and in other States adjacent to Kentucky, should be interested in attending this meeting. Louisville is looking forward with the keenest interest to the time when it shall open its arms in a hearty greeting to those who shall attend.

"The scientific work of this Association is well known to your editorial staff. There will be on the program of the Louisville meeting many physicians and surgeons of national and international reputation whose papers and discussions will be of outstanding interest to all in attendance.

"Very respectfully,

"EMMETT F. HORINE, M.D.,
"President Jefferson County Medical Society;

"W. E. GARDNER, M.D.,
"Chairman Publicity Committee."

Secretaries of component societies throughout the state are requested to forward to the Journal of the American Medical Association medical news of interest to the profession. News of deaths of doctors should always be included.

Every secretary is in a sense a reporter for the American Medical Association in gathering news.

DEATHS

Dr. Oscar R. Tomlinson, Tate Springs, Tenn.; Tennessee Medical College, Knoxville, 1892; Bellevue Hospital Medical College, New York, 1894; past president of the Hamblen County Medical Society; aged 60; died August 27, in a hospital at Fort Sanders, of complications, following an operation for appendicitis.

Dr. Wm. Ralph Sifford, Nashville; University of Tennessee, 1894; aged 67; died September 19, in a Nashville hospital.

Dr. Alfred G. Kyle, Knoxville, Tenn.; University of Tennessee, 1900; aged 66; died August 30.

MARRIAGES

Miss Helen West, of Durant, Mississippi, to Dr. J. J. Armstrong, of Chattanooga.

Miss Winifred Tucker, of Tintah, Minnesota, to Dr. Ben Hamilton Nicholson, of Nashville.

NEWS NOTES AND COMMENTS

THE LOUISVILLE MEETING OF THE SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association meets in Louisville, Ky., November 11-14, 1930.

The Southern Medical Association has come to the front with great rapidity. It is one of the really large and influential medical associations in this country.

Louisville is a great city in which to meet. There should be a large attendance from Tennessee on this meeting of our own Southern Medical Association.

Early in September Dr. C. M. Cowan, of Bristol, suffered a stroke of paralysis. Our last reports indicate he is improving.

Dr. T. B. Yancy, of Kingsport, has been appointed a member of the Tennessee State Board of Medical Examiners.

Dr. J. B. McClellan, of Bristol, was painfully injured in an auto accident.

Dr. J. S. Allen, of Murfreesboro, has moved his offices to Spring Street near the Polk Hotel.

Dr. G. H. Berryhill, of Huntingdon, is in St. Louis, taking a post-graduate course in E. E. N. T.

Dr. James LaRue, of Pulaski, has been a patient in a Nashville hospital.

Twenty children and grandchildren of Dr. R. L. Baker, of Lebanon, were present September 14th at a family reunion.

Dr. W. R. Graves, of Memphis, is now occupying his new offices at 1193 Madison Avenue.

Dr. L. J. Caldwell, of Nashville, is now in his new office in the Doctors' Building.

Dr. D. T. Kimbrough has been transferred from Ft. Lyon, Colorado, to U. S. V. Hospital, Ontwood, Kentucky.

Dr. Ralph Frazier, of Knoxville, has moved to Etowah and is doing general practice there.

Dr. W. H. Enneis has been appointed as Director of Health for the city of Knoxville.

Dr. James R. Reinberger, of Memphis, now has his office at 1045 Madison Avenue.

On November 3rd, examinations will be held for commissions as Assistant Surgeon in the regular corps of the U. S. Public Health Service. Those interested may write the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Dr. Wm. H. Brandon, of Memphis, announces the removal of his offices to 1460 Madison Avenue.

Dr. R. L. Witherington has removed his office to Lebanon.

Dr. S. T. Ross, of Nashville, has moved his office to the Doctors' Building, Rooms 501-5.

Dr. Ray C. Bunch, of Nashville, is now located in the Doctors' Building.

Dr. C. L. Hill, of Nashville, has moved his office to the Doctors' Building.

MEDICAL SOCIETIES

East Tennessee Medical Society—Dr. Edward Rose, of the University of Pennsylvania, and Dr. C. D. Colby, of Asheville, N. C., will be the guest speakers at the Cleveland meeting October 16-17.

A good program has been prepared and this will be one of the best ever held.

The Middle Tennessee Medical Society will meet at Lawrenceburg on November 6th and 7th.

Bedford County—September 18th, Dr. J. P. Taylor spoke on "Endocrine Disturbances" and Dr. J. T. Woods opened the discussion.

Carter County—On September 2nd, the regular meeting was addressed by Dr. E. E. Caudill on the subject of "Duodenal Ulcer". Liberal discussion was given the paper. Several case reports were discussed.

Coffee County—The regular September meeting was held in Manchester. Dr. C. E. Evans presented a paper entitled "Artificial Feeding of Babies".

Davidson County—Sept. 23: "The Significance of Urethral Discharge in the Male," by Dr. Jefferson C. Pennington. Discussion opened by Dr. Horace Gayden.

Sept. 30: "Uterine Bleeding", by Dr. L. E. Burch. Discussion opened by Dr. Dewey Foster. "Report of Case of Medistinal Tumor", by Dr. H. M. Merchant. Case of unusual ulcer of mouth, by Dr. H. M. King.

Oct. 7: "Demonstration of X-ray Films of Chest and G. I. Tract", by Dr. H. S. Shoulders. Discussion opened by Drs. Howard King and Hollis Johnson.

Oct. 14: "Congenital Pyloric Stenosis", by Dr. Barney Brooks. Discussion opened by Dr. O. H. Wilson.

Gibson County—The Gibson County Medical Society met on September 29th with twenty-five doctors present. Dr. Jarrell Penn, of Memphis, spoke on the "Commoner Orthopedic Conditions", and Dr. Oliver, of Medina, gave a paper on "Pernicious Vomiting of Pregnancy". Both of these papers were freely discussed. Drs. Bennett and Donaldson of Trenton, Bryant of Milan, Jones of Bradford, Penn of Humboldt, and Jackson of Dyer, had just returned from a four months' graduate course at Vanderbilt. Each of these doctors gave a brief resume of their impressions of the course.

The secretary announces the following program for the October 27th meeting:

"Diseases of the Cervix", by Dr. W. T. Black, Memphis.

"Paper on Obstetrics", by Dr. J. C. Ayers, Memphis.

"History of Anesthetics", by Dr. George Penn, Humboldt.

Five-minute reports on post-graduate work.

Hamilton County—Sept. 18: "Peritonitis", by Dr. C. A. Skelton. "Physiotherapy", by Dr. W. M. Bogart. Discussion opened by Drs. D. N. Williams and R. C. Robertson.

Sept 25: "Vincent's Angina", by Dr. W. W. Evan. "A New Method of Estimating Traction in Fracture Work", by Dr. Edw. T. Newell. Discussion opened by Dr. J. H. Revington.

Oct. 2: "Care of the Expectant Mother", by Dr. D. N. Williams. "Prevention of Puerperal Sepsis", by Dr. W. A. Reed. "Three Months Colic", by Dr. H. D. Long. Discussion opened by Dr. J. C. Brooks.

Oct. 9: "Acute Chest Conditions", by Dr. W. E. Vaden. "Endocervicitis", by Dr. E. M. Harrison. Discussion opened by Drs. J. L. Bibb and J. B. Haskins.

Knox County—Sept. 9: "The Attenuation of Measles by Whole Blood or Blood Serum", by Dr. Oliver Hill. Discussion opened by Dr. W. R. Cross.

Sept. 16: "Drug Eruptions", by Dr. A. H. Lancaster. Discussion opened by Dr. Lynn.

Sept. 23: "The Diagnosis of Congenital Pyloric Stenosis", by Dr. Barney Brooks, Nashville.

Sept. 25: All-day meeting at Andrew Johnson Hotel. The following papers were read:

"The Role of Vitamines in Health and Disease", by Margaret B. McDonald, biochemist, University of Tennessee.

"The Present Problems of Tuberculosis", by Dr. J. B. Naive. Discussion opened by Dr. J. F. Brewer.

"The Clinical Use of Digitalis", by Dr. Drew Luten, St. Louis.

"Some Interesting Cases With X-ray as An Aid in Diagnosis", by Dr. Eugene Abercrombie. Discussion opened by Dr. H. H. McCampbell.

"The Eye as a Diagnostic Medium", by Dr. W. W. Potter. Discussion opened by Dr. Robert Leach.

"Diagnosis and Treatment of Hyperthyroidism", by Dr. R. G. Waterhouse. Discussion opened by Dr. Eben Alexander.

"Dementia Praecox", by Dr. Jesse Hill. Discussion opened by Dr. R. E. Lee Smith.

"The Gallbladder", by Dr. I. S. Ravdin, Philadelphia.

"Medical Parasites", by Dr. Charles E. Humiston, Chicago.

Sept. 30: "Diagnosis and Treatment of Intracranial Hemorrhage in the New-Born", by Dr. W. R. Cross. Discussion opened by Dr. George Baker.

McMinn, Monroe, Loudon Counties—On September 18th these three counties held another one of their very profitable meetings at Lenoir City. The program was as follows:

"Pneumonia", by Dr. R. C. Kimbrough, of Madisonville. Discussion opened by Drs. J. J. Harrison, Loudon, and Dr. McClary, of Athens.

Paper by Dr. D. P. Brendle, Englewood. Discussion opened by Drs. J. A. McCollum, of Vonore, and W. H. Harrison, of Loudon.

"Some Diagnostic Points Between Atelectasis of the Lungs, Intracranial Hemorrhage, Hypertrophy of the Thymus, Congential Malformations of the Heart, Asthma and Foreign Bodies in the Respiratory Tract in Infancy and Early Childhood", by Dr. J. G. Eblen, Lenoir City. Discussion opened by Drs. W. H. Arrants, Sweetwater, and E. M. Aiken, Etowah.

"Ascites", by Dr. J. B. McElroy, Memphis, President Tennessee State Medical Association.

At the noon hour lunch was served at the hotel. After dinner talks were made by Drs. E. R. Zemp, W. S. Nash, Oliver Hill, H. E. Christenberry, of Knoxville, and J. L. Bibb, of Chattanooga.

Roane County—On Sept. 16, the largest attendance of the year heard Dr. T. H. Phillips' paper on "Intestinal Obstruction". The next meeting will be the third Tuesday in October.

Warren County—Dr. E. L. Mooneyham read a paper on "Typhoid and Its Treatment" at the August meeting. Dr. A. J. Trail had "Colitis" as his subject at the September meeting.

BOOK REVIEWS

THE TREATMENT OF DIABETES MELLITUS WITH HIGHER CARBOHYDRATE DIET. By William David Sansum, M.S., M.D., F.A.C.P.; Percival Allen Gray, Ph.D., M.D.; Ruth Bowder, B.S. Published by Harper & Bros., New York. 309 Pages. Price $2.50.

This text designed for physicians and patients is one of a series of Medical Monograples edited by Harper and Brothers, and is an elaboration of a paper of Sansum, Blatherwick and Bowden published in the Journal by the American Medical Association in 1926. It is a plea for the more liberal use of carbohydrate in the diabetic diet, higher than has perhaps been recommended heretofore, and more closely conforms to the normal diet of individuals who are free of disease of the pancreas.

Swinging from the work of Woodyatt, who believed that diabetics were safe from ketosis if the fat in the diet did not exceed twice the weight in grams of carbohydrate plus one-half that of the protein, to one where the diet contains no less than two parts carbohydrate to one part of fat and where possible in children three to four parts of carbohydrate to one of fat. Protein restriction shows no radical change being no less than two-thirds gram per kg. in adults and 1.5 in children.

Milk should be in every child's diet and if possible in adults. Attention is called to the necessity for proper amounts of mineral, vitamins and sufficient alkaline ash foods. This latter, the writer believes, is an important point in the prevention of arteriosclerosis to which the diabetic is so prone.

The diabetic is taken as he presents himself to the physician, who without elaboration should explain the disease, its cause and its treatment.

The general principles of treatment are given, which are advisably begun in a hospital where the principles of diabetics may be learned as well as the ability to test individual's urine. The time relation of insulin administration is discussed and where demand is present for 100 units or less, it is given in two doses, five-eighths 30 minutes before breakfast and the remaining 30 minutes before evening meal. If the dose exceeds 100 units per day, five-elevenths of the total is given 30 to 60 minutes before breakfast, three-elevenths after the mid-day meal, and the remaining at bed-time. This is not followed routinely, but applies to the average case.

The examination of urine for sugar, acetone and diacetic acid is outlined as well as instruction for the glucose tolerance test. A chapter is devoted to the complications of diabetes and their treatment and prevention. Calling for a special attention is the use of a rather high carbohydrate diet, one that more closely follows the normal diet than those previously employed. Attention is called to the advisability of use of a diet which contains foods that when metabolized leave an alkaline ash. The author believes that such a diet is preventive of hypertension and arteriosclerosis, and cites experimental evidence obtained from the use of alkaline ash and acid ash foods in rabbits. In those using the former, normal tension and the absence of arterial changes were noted, while the latter revealed both, many of the rabbits dying during the experiment.

Their position for the use of a higher carbohydrate diet with limited proteins and a lower amount of fat is set forth in the end of the first section of the book. Comments by Joslin and other diabetics workers on the diet used are given. While not subscribing to it, Joslin states it will be of interest to note the end result at the end of seven years.

Geyelin of New York, Richardson of Pennsylvania, and Aldersberg and Porges of Vienna are likewise using the author's or a similar method of treatment.

The second section of the book is a compilation of instructions given to patients concerning diatetics, and also contains standard diet formulas. While each diabetic will demand a separate and distinct formula, the long list planned and printed by the author can be added to or subtracted from and made to correspond to that demanded by almost any person. Different from most menus given previously by authors, the C. P. & F. of each food prescribed is given and while not necessary, it still is a valuable aid as a guide and reference. The reviewer would most heartily approve of such a compilation.

As a hand-book for physicians, the reviewer would recommend, and while the latter portion is well adapted to the needs of and is readily grasped by the patient, the first portion of the book appears too sophisticated for the average layman. —R. B. W.

DISEASE OF THE SKIN: Treatment in Detail. By Thomas Noxon Toomey, M.D., F.A.C.P., St. Louis, Mo. Published by The Lister Medical Press, St. Louis, Mo. Issued April, 1930. 512 pages. Large Octavo. Price $7.50.

This is apparently intended as a companion book of two others by the same author: namely, Volume One Pathology and Volume Two Diagnoses of Diseases of the Skin.

It covers virtually all known dermatoses and is probably the most comprehensive book on therapy yet to appear.

The author seems to have anticipated questions of technique and therapy that are constantly arising with both the dermatologist and general practitioner. These have been met in detail. Apparently many of the methods of treatment are his original ideas. He has also included the older as well as the newer methods of local application and physical therapy. Hygiene, diet, and internal medication are given careful consideration. He has substituted Latin descriptive names for those of individuals. There are no photographs and very few descriptions. The diagnoses are presupposed.

It will aid the dermatologist to enlarge his scope of therapy. The general practitioner will find it well worth while in carrying out treatment after diagnosis has been established.

E. E. BROWN, M.D.

STEDMAN'S MEDICAL DICTIONARY.

"A practical medical dictionary of words used in medicine with their derivation and pronunciation, including dental, veterinary, chemical, botanical, electrical, life insurance and other special terms; anatomical tables of the titles in general use, and those sanctioned by the basal anatomical convention pharmaceutical preparations, official in the U. S. and British Pharmacopoeias and contained in the national formulary, and comprehensive lists of synonyms. By Thomas Lathrop Stedman, A.M., M.D. Eleventh, Revised Edition. Illustrated. William Wood & Company, New York, Publishers." XI and 1222 pages. Price $7.50.

A comprehensive review of such a book can be written by very few. Two or three of the outstanding features of the work will be mentioned.

1. This eleventh edition following the tenth by only two years shows that the purpose of the author is to keep the work up to date. A large number of new words have been added.

2. Strict attention has been paid to orthography as was the case in former editions.

3. Very complete lists of synonyms follow many words, as an illustration of this—under the word "food" there are eleven related words or conditions defined.

4. In most of the tables each term occupies a separate paragraph, thereby decreasing the effort necessary to find the desired word.

Many other points might be mentioned. It is sufficient to say that both author and publisher have maintained the high standard set by former editions.—W. M. H.

PRINCIPLES OF CHEMISTRY. By Roe. The C. V. Mosby Company, Publishers. Price $2.50.

In an attempt of the author to briefly present an introductory text book of inorganic, organic and physiological chemistry for nurses and students of applied chemistry he has succeeded. The fundamentals leading to a working basis of advanced chemistry are especially well presented in such a brief work.

As was expected, much space is devoted to inorganic chemistry, one chapter, however, deals with organic chemistry in its purest form. From this point both are applied, physiologically, to metabolic and diatetic phases.

In consideration of the limited space allotted to the work, it seems a very wise arrangement and full of originality.—J. H. L.

MODERN METHODS OF TREATMENT. By Logan Clendening, M.D. Third Edition. Published by the C. V. Mosby Co. 1929. Price $10.00.

This is the third edition of a text devised as a reference book of treatment, not only by drugs but by dietary and physio-therapeutic means as well.

This edition is a revision of the former one and to it has been added what is of practical and of proven value in the new and outstanding additions of therapeutics. Its chief interest will be to the one for whom it is written, that person who wishes a quick, concise statement of a therapeutic agent without all the smaller, microscopic bickerings of contentious minds. The busy physician will be delighted with its exactness, and the lazy one will appreciate its brevity.

While concise, each measure discussed is given in detail sufficient for one to grasp the most modern technique. Diseases and treatment are arranged according to systems. Excellent chapters on dietetics and hydrotherapy are given.

The technique of spinal puncture, the indications and contraindications and technique of artificial pneumothora blood matching and transfusions, and many of the mechanical procedures necessary for diagnosis and treatment are given with such exactness that one wholly unfamiliar with the test should be able to carry them out. —R. B. W.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Effects of Avertin on Liver Function.

The rate of secretion and composition of the urine, the reaction, alkali reserve and concentration of the blood and the body temperature. Mr. Bruger, M.D., C.M., M.S.C.; Wesley Bourne, M.D., C.M., M.S.C., and N. D. Dreyer, M.A., M.R.C.S., L.R.C.P. American Journal of Surgery, July, 1930.

These observations were made on dog and man. The dogs were given 500 mg. of crystalline avertin per kilogram of body weight in 3 percent aqueous solution per rectum. This dose in dogs gave no trouble but later using avertin fluid, which is 100 percent in amylene hydrate, in the same dose complete cessation of respiration occurred in 3 out of 5 within five to ten minutes.

The method employed to test liver function was that of Rosenthal and White, which depends upon the removal of bromosulphalein from the blood. It was found that avertin produces slight and transient, but no delayed liver damage.

As to the rate of secretion and composition of urine, it was found that anuria occurs immediately after its administration due to lowered blood pressure and after a period of fifteen minutes to an hour marked oliguria occurs. The absolute output of urea is always lessened for four to six hours. The percentage however is increased or only slightly lessened, in eighteen to twenty-four hours the absolute output is normal and the percentage is much above the control figures.

Where there is little or no respiratory depression and good color, the blood bicarbonate content is little affected. With definite respiratory depression, the bicarbonate increases. An increase in hydrogen-ion concentration is due to anoxemia and disturbed phosphoric-lactic acid metabolism. Hydremia also occurs and a definite fall in body temperature.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Comparative Study of Hemolytic Streptococci From Patients Convalescent from Scarlet Fever. Journal of Infectious Diseases, July, 1930. M. B. Kirkbride, M. M. Wheeler and C. D. West, Albany, N. Y.

These authors studied eighty-five cases of scarlet fever to determine whether the type of hemolytic streptococci initially present became altered in any way during the course of the infection, or whether there was any relation between the reactions of a particular strain and the epidemiologic evidence of its ability to induce infections in human beings. Fifty to sixty percent of the patients were found to be carriers of hemolytic streptococci at the end of the quarantine period. Clinically forty-seven patients indicated that during the early stages of the disease from 20 to 30 percent had probably been the source of the incitant of infections in other persons, only two, or less than 6 percent, of thirty-four patients who were carriers of hemolytic streptococci at the time they were released from quarantine gave a history of being the probable source of the incitant of infections in persons in contact with them later. The strains isolated during the early stages of the disease from sixty typical cases of scarlet fever were found to vary widely with regards to their cultural, biochemical, and serologic reactions and their toxigenicity. No differences were observed between the streptococci isolated from the same or from different patients during the course of the disease or from healthy convalescent carriers as long as from two to six months after onset. Comparative tests from eighteen patients showed the same strain of streptococci at the end of the quarantine period as were present at the onset in twelve patients. In five of the six cases in which they were not identical, the history of contact indicated the possibility of the transfer of the second type of streptococci from another patient known to harbor such a type. It seems, therefore, a system of quarantine for scarlet fever based on a bacteriologic examination would be impracticable.

Bacteriologic and Clinical Study of Gastric Ulcer—Annals of Surgery—Philadelphia—E. W. Saunders. New York, Aug., 1930.

The author isolated a streptococcus from nineteen resected gastric, duodenal and gastrojejunal ulcers and by differential cultural tests, agglutination tests, cross agglutination and agglutinin absorption tests he proved these to be identical and specific. Its agglutinogenic and antigenic identity with similar strains producing ulcers of mucous membrane and skin has been demonstrated, and also its nonidentity with strains from foci of infection and appendicitis and cholecystitis has been shown. Patients with gastric ulcer have this organisms specific agglutinins in their blood serum in 100 percent of cases tested, while those with any type of streptococcus infection do not show any agglutination or if present is a very low titer. In sections prepared with Levanditi tissue stain the organism is apparently present in the lesion. The organism is apparently present in the lesion. The organism undergoes dissociation under artificial cultivation and the possibility of it doing likewise in vivo has been demonstrated. The virulent form will not grow in bile in low dilutions and the intermediate form rapidly become nonvirulent under bile cultivation. Surgical procedures which return bile to the ulcer-bearing area give the best clinical results.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Status of Ultraviolet Ray Therapy in Diseases of Skin. By A. E. Schiller, M.D. Journal of Radiology, June 1930.

He points out that certain diseases of the skin can be actually treated with better results than by most any other measure. The groups that respond most favorably to the action of the ray are tuberculosis of the skin, septic wounds and ulcers. He also points out that in other groups the ultraviolet ray acts more or less indifferently and at best is only an adjunct to general treatment. He states that ultraviolet radiation in the proper hands is accompanied by a very small amount of risk and also calls attention to the growing tendency that some would have us believe it to be entirely fool-proof and that it is not an agent which can be put into the hands of the public to be used indiscriminately.

The Treatment of Furuncles. By Levin, in Medical Journal and Record, March 5th, 1930.

He protests against incision or traumatization of any kind to a boil. His recommendation is as follows:

In the early stages a boil may be aborted by local application of tincture of iodine. If not aborted he first recommends a 4 per cent ointment of ammoniated mercury with 1 per cent phenol. Later a 20 per cent salicylic acid plaster may be applied to soften the epidermis and promote drainage. When discharge is freely established a wet dressing is advised, but never cover the lesion with impervious material, such as rubber tissue.

He states that general health should be attended to, as well as the colon. He also recommends insulin if blood sugar is high. He also states that vaccines are not to be forgotten.

INTERNAL MEDICINE

By R. B. Wood, M.D.
C. J. Carmichael, M.D.
Knoxville

Diabetic Ketosis and Functional Insufficiency. Alvi F. Coburn, M.D. in The American Journal of the Medical Sciences. Aug., 1930.

A study is made of patients in Ketosis, admitted to Presbyterian hospital from 1916 to 1930.

Of 132 instances where the Co2 combining power of the blood was under 25 volumes per cent, thirty were admitted before the insulin period. Of this number two recovered, while of 92 instances treated with insulin there were 27 fatalities, six of whom died of other disease such as pneumonia, T. B. and coronary occlusion. Sixteen died in Ketosis without complications, so far as could be determined.

Having noticed that those cases of Ketosis which did not recover showed symptoms of circulatory collapse with no or little urinary secretion, which contained only traces of acetone bodies, and that those recovering maintained a high urinary output with large amount of acetone the author concludes that renal insufficiency is the cause of death.

It was further noted that the downward trend of such cases was changed by the repeated use of intravenous infusions, thereby causing recovery of renal efficiency.

The author after many varied and interesting case reports concludes:

(1) That in the alleviation of Ketosis urinary excretion of acetone bodies is of more importance than their oxidation.

(2) That Ketosis may exist without Ketonuria. This absentee may be found preceding anuria and should be a warning to the physician.

(3) The development of anuria greatly jeopardizes the recovery of a patient with severe Ketosis.

(4) Intravenous fluids is by far the best method for correcting Ketosis or anuria.—R. B. W.

The Problem of Pulmonary Tuberculosis in Patients With Diabetes, by Reginald Fitz, M.D. American Journal Medical Science, Aug., 1930.

To the physician handling a large series of diabetic patients, there comes the realization that efficient supervision entails more than the ability to devise a diet that renders one non-glycosuric. When one considers that there is in the neighborhood of sixteen thousand diabetics in this country who are suffering with tuberculosis and that about 50 per cent die within a year, it behooves the physician to make a diagnosis as early as possible.

A tubercular precess is more liable to develop in the elderly diabetic and particularly in the one in poor circumstances and on an inadequate diet. At the beginning it is likely to be found in the hilum region, a location difficult to most physicians to point out, unless frequent and careful examination including the x-ray are made.

It is of interest to note that in this series of 1920 diabetics that there were 35 cases of complicating tuberculosis, a rate of 23 per thousand; 74% were following sedentary work, 31% had tuberculosis in their family, 14% had diabetes, and 6% diabetes and tuberculosis present in the family, while in 49% there was a negative history to both diabetes and tuberculosis.

Thirty per cent of the above cases developed a tubercular infection while under treatment for diabetes, and 70% were known to have the disease at the time the diabetes was discovered.

Of these 35 cases, 30 were fatal, 63% in one year or less, 23% in 1 to 3 years, and only 13% lived more than three years.—R. B. W.

The Futility of Alkali Treatment in Diabetic Coma. I. I. LEMANN, M.D. American Journal Medical Sc., August, 1930.

Confirming Joslin's experience, the author on analyzing forty-seven of his own cases concludes that alkales can be of no aid and may do harm in the treatment of diabetic coma.

Treating forty-one comas with insulin and diet, the author's mortality was 2.4% which on comparing with St. Lorant's in the pre-insulin days of one saved of forty-two cases though alkales were used reveals not only the possibilities with insulin but the uselessness of the alkali therapy.
—R. B. W.

Observations on the Etiological Relationship of Achylia Gastrica to Pernicious Anemia. Castle, Townsend and Heath. American Journal Medical Sciences, September, 1930. Page 305.

In this, their third article upon this subject, they bring forth additional evidence that the origin of the Addisonian type of pernicious anemia is dependent on faulty gastric digestion of protein. The most outstanding fact in their work is that the defect is gastric and not salivary, nor duodenal in nature. Their own statement of facts explains most accurately:

"A marked hematopoietic effect associated with general clinical improvement may be observed with regularity in patients with uncomplicated Addisonian pernicious anemia by permitting the absorption from the gastro-intestinal tract of such patients of some substance, or substances, generated in vivo or in vitro, by an interaction of an intrinsic factor (a), and an extrinsic factor (b.)"

Their so-called intrinsic factor is secreted by normal gastric mucosa, this power being partially or totally lost in the gastric mucosa of pernicious anemia patients. By the interaction of this intrinsic factor (a) and their so-called extrinsic factor (b) probably a protein or of a closely related nature; the trick is turned and the hematopoietic system does its work. Thus far they advance no theory as to the excitor or the inhibitor of their intrinsic substance. Here appears to rest the final solution as it seems highly probable that many proteids will act as well as the beef muscle used in their experiments.

Let's hope that the solution when found will be simple of application and less expensive and trying than the liver diet.—C. J. C.

Renal Damage Following Administration of Novasural. Douglas H. Sprunt. Archives of Internal Medicine, September, 1930.

The extreme condition in which we sometime see patients and the apparent urgent demand for prompt relief of edema often prompts us to extreme measures or pronouncing the case hopeless or too far advanced. Much has been written for and against the use of Novasural and similar preparations. This article of Dr. Sprunt's definitely proves in his small series of cases that if we only take the time to eliminate the cases of contra-indications that we may use Novasurol with comparative safety. In three of his patients in this series there existed definite contra-indications, viz.: one a case with temperature elevation, one with tuberculosis, and one a definite nephritis. In each of these cases autopsy revealed damage to renal epithelium.—C. J. C.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Treatment of Detached Retina by Means of Ignipuncture. J. Meller. Zeit. f. Augenh., February, 1930.

Since 1925 Meller has operated forty-one eyes in thirty-nine patients by means of ignipuncture with permanent cure in twelve percent of the eyes. The cured cases are reported in detail. He punctures the sclera directly with a hot cautery and withdraws it instantly. This method leaves only a small white circular scar, less than one disc diameter wide, as compared with the very large protuberant scar of the more protracted cauterization. With the instantaneous method it is almost impossible to include the edge of the retinal tear in the cauterization. Serious intraocular hemorrhage is a possible complication of the operation, and Meller is unable to say whether it is greater with his lightning-like puncture than with more deliberate cauterization as practiced by Lindner.

Motor Field Chart for Industrial Compensation Cases. American Journal of Ophthalmology, September 1930.

QUESTION: I wish to make inquiries regarding the individual motor field chart as recommended by the American Medical Association's committee on compensation for eye injuries. I have been able to obtain the small cards for recording muscle function, but have not been able to get a large wall chart for actually recording the measurements. I should like to know where such a chart can be obtained. If not obtainable, please advise me as to the size of the chart for any given working distance so that I may construct one.

ANSWER (from Dr. Nelson Miles Black, Milwaukee): I do not know of any chart that is on the market for testing muscle function. I use a plat outlined on the wall of my office four by five feet and divided into one foot squares to correspond with the recording chart. The patient is placed about two feet from the chart and with the head held rigid he turns his eyes to each square in the wall chart, and if diplopia is noted in any square it is recorded on the record chart.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

Congenital Dislocation of the Hip—An Operation for Defective Acetabulum. By Robert Soutter. Surgeon and Obs., August 1930.

In case of failure to secure and maintain reduction in congenital dislocation of the hip due to a defect of the acetabulum, either in shape or in the inclination of the cavity, it becomes necessary to form a boney block above the acetabulum. This is to prevent upward displacement as time goes by and the weight of the body increases. The earliest operation for this purpose was done by Koenig in 1893. Since then numerous operations have appeared. The principle feature of most of them is the turning down of a shelf of bone from the ileum above the acetabulum and the insertion of the bone graft into the interval. The author modifies the procedure as follows:

"An incision is made from the anterior superior spine of the ileum to two centimeters below the top of the torchanter and then backward and upward."

The soft parts are reflected upward and the capsule is exposed. A transverse slot is made entirely through the ileum just above the head of sufficient width. A square is then cut from the ileum the same width above just through the outer table, leaving it attached above like a trap door. A wide bone graft is then removed from the trochanter, neck and body of the femur and is driven through the slot. Then the lower part of the trap door is pulled outward and fastened to the graft with cat gut. The resulting triangle eventually becomes filled with bone. The advantages claimed are that only one incision is necessary and that a good wide boney shelf results.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Results of Tonsillectomy. Albert D. Kaiser, M.D. Jour. A. M. A., Sept. 20, 1930.

A comparative study of 2,200 tonsillectomized children with an equal number of controls three and ten years after operation is reported, and the following conclusions were drawn:

"The real value of the removal of tonsils and adenoids cannot be definitely established in a few years. Apparent benefits during the first few post-operative years are not so evident over a ten-year period.

Outstanding benefits are apparent in influencing the incidence of sore throats over a ten-year period.

Substantial benefits are apparent in rendering children less susceptible to scarlet fever and diphtheria.

Acute head colds and otitis media, though definitely lessened over a three-year period, are not essentially influenced over a ten-year follow-up period.

Cervical adenitis is decidedly reduced in tonsillectomized children over a ten-year period.

The respiratory infections, such as laryngitis, bronchitis and pneumonia, not only are not benefitted, but actually occur more frequently in tonsillectomized children.

First attacks of rheumatic manifestations occur from 30 to 50 per cent less often in tonsillectomized children. The greatest reduction occurs in children tonsillectomized early. Recurrent attacks are not benefitted at all.

Incomplete tonsillectomies do not offer the same protection against the usual throat complaints and infections as complete removal of tonsils.

The hazards of tonsillectomy must be considered in evaluating the end results. Considering this hazard, the late results seen in 2,200 children ten years after operation are evident only in the reduction of sore throat, cervical adenitis, otitis media, scarlet fever, diphtheria and rheumatic fever and heart disease."

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.

Doctors Building, Nashville

The Early Recognition of Gastric Ulcer and Carcinoma as Revealed by Roentgen-Ray Studies. By Maurice Feldman, M.D., Radiology, October, 1930.

A filling defect is usually required to diagnose gastric lesions. In most ulcers and carcinomas this sign is present, but may be absent in early cases. Repeated examination is necessary. Only these obscure cases are considered in this paper.

There is a lack of attention given to the gastric lesions without a defect. Valuable secondary signs are often recognized: (1) absent or diminished peristalsis in certain areas; (2) spasm.

Serial radiography at short intervals shows marked changes in position of stomach. Superimposition of serial radiograms shows a changeable curve in normal cases, and a local fixation of the curve in case of disease. The fixation is usually seen on the lesser curve.

The following types are observed: (1) a straight line, usually noted on the lesser curvature; (2) a roundness of the lesser curvature; (3) a possible involvement of both curvatures, with dimunition of peristalsis.

The straight line is present in one-fifth of Kuttner's cases. Serial radiograms can be superimposed more easily than polygraphy, in which several exposures are made on one film.

Many early ulcers and carcinomas give a stereotyped, fixed, or straight line appearance. The extensive fixation occurs most often in carcinoma. Carcinoma of the cardia is prone to cause this appearance. These findings are valuable curative aids.

With carcinomatous involvement of both curvatures, there is an absence of peristalsis and a fixed position. The stomach empties rapidly. This type usually occurs at the cardia.

In the ulcerative type the lesion is usually on the lesser curvature. This gives the straight line effect.

A persistent spasm is a frequent sign of gastric disease. It occurs in the pyloric region most often. It may be reflex or due to a cicatrix. The incisura may be the only sign. It occurred in 11 out of 67 cases.

The earliest changes occur in the mucous membrane at a time when a defect is absent. In some instances peristalsis may be checked or a spasm may be present. In the next stage induration is found in musculature which interferes with peristalsis. It later ulcerates producing a defect.

Every examination requires fluoroscopy in various positions. A series of films should be exposed in these positions for study. Stereotyped or fixed appearance may be overlooked by fluoroscopic examination.

A spasm, straight line, or fixed appearance may be the missing link in the chain of symptoms required for a diagnosis. In all these cases showing a stereotyped stomach an achylia was found in the carcinomatous cases.

Four cases were presented which illustrate the importance and value of indirect signs in diagnosis of gastric disease.

Summary:

Early signs of gastric disease are presented with a description of x-ray findings. Importance of diagnosis before defect can be detected is stressed. Serial film exposure is more valuable than fluoroscopy. Frequent examination is necessary.

Conclusions:

1. Stereotyped, fixed, or straight line appearance of the curvature is the result of induration in tissues.

2. Diminished or absent peristalsis is probably the earliest roentgen-sign of gastric disease.

3. A high, small, stereotyped stomach which empties rapidly is a sign of early carcinoma at the cardia.

4. Spasm is frequently the result of gastric disease. An incisura occurred in 16% of the cases.

5. The presence of defect is not always necessary for a diagnosis.

6. "The proper interpretation and evaluation of the roentgen signs here described is highly important in the early diagnosis of gastric disease."

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Rupture of the Bladder—A Plea for Its Early Diagnosis and Treatment. George de Tarnowsky. Journal of the American Medical Association, Vol. 95, No. 7, pp. 476-482.

An excellent article on the subject of traumatic rupture of the urinary bladder. The author finds that in extraperitoneal rupture of the bladder, there may be rare instances of actual puncture of the viscus by a spicule of bone if the trauma is very violent; in most cases the rupture occurs as a result of a sudden pull on the lateral true ligaments if the bladder is empty. Bacon and Le Count did not find any bone spicules in the bladders in their reported cases. Direct trauma of the suprapubic area may be transmitted to a distended bladder and cause a rupture as occurred in a Cook County case. All intraperitoneal ruptures are of the bursting variety; a further subdivision into spontaneous or pathologic and traumatic clarifies the pictures. By spontaneous it should be understood, a tear of the bladder without external or internal stimulation. Besley, in 1907, reported one spontaneous rupture in twenty-five cases, analyzed from the Cook County services. Five are reported in the present series; two of them may be classed as doubtful because they occurred in alcoholic patients.

Automobile transportation has multiplied the number of daily collisions. Both the driver with the steering wheel in front of him and the occupants of the front seat with the dash-board in front of them, are likely to suffer trauma of the lower part of the abdomen during collisions or sudden stops of the automobile. A large percentage of reported accidents occurred in persons with over distended bladder; lying against the anterior abdominal wall, this viscus will burst without any trauma to the bony pelvis. While multiple injuries or loss of consciousness may at first cloud the diagnosis, pain in the lower part of the abdomen, vesical tenesmus, bloody urine or inability to urinate should be sufficient to indicate immediately to the surgeon the probable bladder lesion.

The average mortality from bladder lesions while unquestionably increased by coincident injuries to other organs or tissues, is still too high because primary diagnoses are not being made frequently enough. Rupture of the bladder is as much a surgical emergency as acute abdomen and delay in operating is dangerous. Closure of the tear by suture, prevesical or cul de sac drainage and catheter a demeure are the three essential operative steps. In individual cases the surgeons may have to modify this technique.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Wenger, A. A. Surgeon, and H. O. Proske. Am. J. of Syphilis. Vol. xiv, No. 3, July 1930.

He discusses the findings in 1,235 cases. He states that "any diagnosis of a genital lesion not confirmed by laboratory findings is merely an opinion and open to question, and that the differential diagnosis between a chancroidal infection and one of chancre requires the services of skilled personnel and in some cases close observation over a period of six months."

He objects to the text-book description of the characteristic findings and thinks it does a great deal of harm.

Chancroid was about equally divided among the two races.

He lays down four fundamentals in the diagnosis of syphilis:

1st. Finding of treponema pallidum.

2nd. Positive darkfield and negative Wasserman.

3rd. Negative darkfield and positive Wasserman.

4th. When darkfield and Wasserman are both negative.

This class of cases require a long period of observation before Lues can be ruled out.

He states that a diagnosis of Chancroid can only be made by cultural methods and that a diagnosis of Chancroidal infection is not established upon the absence of treponema and presence of organisms presenting the morphology of the Bacillus of Ducrey.

Cultural methods are entirely valueless when secondary infection is present.

In 1,235 cases studied the darkfield was positive and Wasserman positive in 470 or 38 per cent. Darkfield was positive and Wasserman negative in 222 or 18 per cent. Darkfield was negative and Wasserman positive in 366 or 30 per cent. Sufficient evidence was present to make a diagnosis of syphilis in 86 per cent of cases. The remaining 14 per cent represents a class of cases which present the great problem. Previous treatment either local or general makes it more difficult.

Considering genital lesions from a public health standpoint he thinks it justifiable to treat all lesions as syphilitic. He takes this stand due to the fact that his patients are usually of the less intelligent class and will not submit themselves to a long period of observation. Another argument is the greater percentage of cures possible if treatment is begun in the early stage.

Their initial treatment covers a period of six weeks, at the end of this time they are referred to their family physician and urged to return for further medication and examination. He believes that a considerable portion can be cured by one course of treatment, provided it is begun early.

He quotes the records of Col. Harrison who reported 109 of 115 early cases given one course of treatment, whose Wasserman remained negative. He contrasts this series with another series of 287 seropositive and early secondary cases. Of these only 215 had a negative Wasserman at the end of first course. The same author reports only 15 per cent cases, of more than six months duration, whose Wasserman was reversed after one course of therapy.

He reiterates his belief that all lesions should be treated as chancre regardless of findings.

We agree with the author that any teaching of characteristic appearance of genital lesions is to be condemned. We disagree, that any patient should ever be treated for syphilis without positive laboratory findings. Darkfield and Wasserman are available to anyone regardless of their financial status and there is little justification for haphazard methods of diagnosis.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII NOVEMBER, 1930 No. 11

THE NATURE OF ECZEMA*

DR. WILLIAM ALLEN PUSEY, Chicago

APROPOS of my title, someone this morning, I think it was your distinguished colleague Dr. Haggard, said that 100 years was too long to have eczema, and so I would make this title rather "The Nature of Eczema, with a Note on Its History.

I chose this subject, when your Chairman invited me to appear here, because of two or three things. In the first place, the history of eczema is very interesting in the period that this society has existed. It has really been a history of disintegration, in large part. Another reason is that the trend in our concept of eczema has been going very distinctly in one direction in the last twenty-five years. And the third is that there has been a very important practical addition to our knowledge of eczema in the last twenty years.

The name "eczema" goes so far back beyond the life of anyone, even in the Tennessee Medical Association, that we are apt to think that the concept of "eczema" as we now use it is one of the old concepts in medicine. As a matter of fact it is not. "Eczema" comes from the Greek word "ekzein", meaning to boil out, and until about the beginning of the nineteenth century it was used in the Anglo-Saxon sense of boil. About that time, Willan of England gave us the conception of eczema as we have had it since, as various forms of dermatitis. Willan's conception gave us a generalization that was of great service in clarifying our knowledge of many skin conditions, but, like many people, it got into trouble by taking in too much. And as soon as Willan gave us that conception everything in dermatology, nearly, was put under eczema, even herpes zoster, such things as psoriasis, pemphigus, dermatitis herpetiformis, and impetigo. All those things went into eczema. It became a great mound, not to say a refuse heap, into which everything in dermatology was dumped.

From that time to this the process has been taking things out of eczema. As soon as we learned what a thing was, either by pathological or etiological or clinical appearances, as soon as it became definite, it was taken out of eczema.

The first great thing taken out of eczema was scabies. Scabies has been known to us for a couple of hundred years, but it was not until Hebra's time that it was determined to be a distinct clinical entity that differed from eczema.

Early in the nineteenth century, one of the French dermatologists, against Willan's protest, put impetigo or pus infection of the skin under eczema.

In the middle of the century, Tilbury Fox took impetigo out of eczema.

Then a little later, in the beginning of my days in dermatology, forty years ago, Unna, of Hamburg, did a very useful service in taking out of eczema seborrhoeic dermatitis, the kind that comes with dandruff and occurs on the scalp, behind the ears, over the breastbone, and in areas where sebaceous glands are abundant. We don't know yet its cause, but its clinical picture is perfectly characteristic and it is universally accepted as a specific disease.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

About the same time, Duhring did the most distinguished thing done in American dermatology by erecting the concept of dermatitis herpetiformis. In doing that, he took a great piece out of eczema.

The last great thing to be taken out of eczema is ringworm dermatitis of the hands and feet. That is a thing that has been lately done and has an interesting history. It illustrates how hard it is to get a truth across when you have to meet a preconceived notion.

When I was a student in Paris in 1892, I remember in the Saint Louis Hospital there was talk of a Turk by the name of Muktar who had demonstrated that certain eczemas of the hand that Fournier and other men said they couldn't distinguish from eczemas were accompanied by the presence of fungus. The thing was entirely disregarded until about the middle of the first twenty years of this century, Whitfield, of London, showed that these cases of eczema of the hands and feet that we had been calling pompholyx, and things of that sort, were really due to ringworm infection, a fungus infection of a specific organism.

Since Whitfield's re-demonstration of this thing, nearly twenty years later we have generally come to recognize the importance of ringworm in the production of eczema of the hands and feet.

That is a thing that I think you are all fairly familiar with, because it is being run down very hard, and, like other new ideas, is being somewhat overworked, but the importance of it can hardly be exaggerated.

Hodge, of the University of Alabama, found that about seventy or eighty per cent of all the students there had this infection between their toes, and wherever you go (it is a little more common in the South than it is in the North) you find ringworm extremely common. I should say sixty per cent would represent the infections in Chicago, and doubtless there is quite as much here.

These infections do not mean always an active process. They simply mean a maceration between the toes, with dead epithelium, sometimes a few fissures, sometimes a little dermatitis there, and nothing more. But in a great many cases this thing flares up and becomes acute on the feet and then goes to the hands. You are all familiar with the picture. It is the old picture of dysidrosis. Dysidrosis used to be called a metabolic disturbance, or, if you got pinned in a corner, you called it a nervous disturbance. Before the days of endocrines that was the refuge. We have practically quit describing dysidrosis as a disease in dermatology. It is the picture of ringworm.

The simplest picture of it, one that you would be familiar with on mention, is the occurrence of a few deep-seated, pearly, tough vesicles either under the arch of the foot or just on the side. They are tense and feel a little uncomfortable at the start, and they may rupture or they may not. Very many cases go to that stage and go no further. Some of the cases that consult you simply show a little dermatitis between the toes and perhaps spreading up on the back of the toes or under the bottom of the foot. But the classical picture of the slight cases shows a few discrete or grouped deep-seated vesicles or thick, horny epithelium of the bottom of the foot.

In the exaggerated cases of moderate distribution you get a violent flare-up of an acute dermatitis on the feet and hands, showing a distinct predilection for the sides of the fingers and the toes and for the palms and the soles, but spreading up on the back of the hands and up the forearm and in many cases going widely over the body.

Between those two degrees of extent you find all sorts of cases. Those are the acute cases, and under treatment they usually go down promptly.

We have also those cases that go into a chronic stage in which we have a dry, scaly dermatitis of the palm, with a rather distinct undermining of the epithelium of the border, and those chronic palmar dermatitides and plantar dermatitides will go on indefinitely, getting better, getting worse, but continuing.

That is the great thing that has been taken out of eczema in the last twenty years. That is an extremely important thing.

In dermatitis of the hands and feet you must always remember the probability (not the possibility) of a ringworm dermatitis. I should say in ninety-five cases out of a hundred you have a ringworm dermatitis. Of course, you can get industrial dermatitides from various sources on the hands and feet, but ringworm is the great thing that causes so-called eczema of the hands and feet.

That is the way this thing has been going. The more we learn about eczema, the more we will know about dermatitis and the smaller does eczema become. The reason for this, of course, is that eczema not a substantive disease; eczema is simply various form of dermatitis. That is my thesis today, that in dealing with eczema you are simply dealing with an inflammatory process of the skin that is identical in every respect with such inflammatory processes as are produced by external irritants.

We have had some obstetrics this morning. When I was a student of medicine, all you had to know to pass the department of obstetrics was not to pull on the cord; you can get by me in eczema if you will just learn that it is dermatitis and no more. If I can put over the idea that in dealing with eczema you are not dealing with anything except dermatitis of various origins, I will have fulfilled all I hope to on this trip.

Eczema is dermatitis. If that is true, eczema can be produced by all sorts of external irritants, and that is the second point that I make. I do not mean to proclaim that eczema has not internal factors in its production, that eczema cannot be produced by internal causes, but eczema is, in the great majority of cases, a disease in which the most important factor or an important factor, and often the sole factor, is external irritation. If that is true, it follows, of course, that eczema can be produced by innumerable external irritants, and that also is true.

Dermatologists can be put into two groups as respects eczema. There are the specifists who insist: Yes, eczema is the same as dermatitis, but there is something more, some traditional thing that distinguishes the ordinary eczema from ordinary dermatitis. Then there are the hard-boiled people, the rationalists, I prefer to call them, who insist that two things that are the same are identical; if you can't separate them in any way, we must accept them as the same. Of course, that is true—two things that are equal to each other are identical. This pathological "x" that they have tried to work in there I will say something about later.

As I say, the pictures are absolutely identical. I could give you many illustrations of that, but perhaps one will suffice. Many years ago, I was fortunate to have a lady of distinguished position and wealth as a patient with a chronic eczema of the hands. She was one of these people of large means and persistent disposition, who left no stone unturned to get that eczema cured. She had been to many of the great dermatologists of Europe and many of the most distinguished men in this country, and they all talked about it as a metabolic eczema. She was a lady who lived high and ought to have had gout if she didn't. The history of it was that whenever she would leave that damnable climate of Chicago (which isn't damnable at all, by the way) and go to Europe, where she liked to go, to Carlsbad or Wiesbaden or some other luxurious rendezvous of the indisposed rich, she would get all right, but when she came back to Chicago she would come back to her eczema.

We all treated her as a metabolic eczema for many years. One day she came into my office after I had not seen her for a long time, and said, "Doctor, I have discovered the cause of my metabolic eczema." (She used the word). She said, "It's primroses. As soon as I got the primroses out of the house I never had eczema again," and she never did have eczema again. There was a primrose dermatitis that the most skillful specifist in eczema couldn't distinguish from eczema.

It is a fact, of course, that if all sorts of external irritants can produce eczema, the running down of the cause of any eczema is an interesting chase and sometimes a very difficult one. I could give you many illustrations of that, but I will give you only two or three.

Several years ago I had an old Jew Peddler come to me about the seventh or eighth of July. He had been out in the forest preserve over the Fourth, and he had a nice dermatitis that looked like poison ivy dermatitis. I put on soothing applications, and it got well in the course of about a week. There was a perfect picture.

The next year he came back to me, and he had the same thing about the same time in July, but this time he had not been out in the woods. He had been in his shop all the time.

I turned him over to an assistant of mine, Dr. Weber, who is very ingenious in running down those external irritants, and he finally worked out this history and proved his statement. That fellow had Chinese lacquer dermatitis.

What had happened in that fellow? He was a man who dealt in little knick-knacks that were sold about the holidays. On the Fourth of July he capitalized our patriotism by selling little flags with sticks on them, such as fakers sell on the streets just before the Fourth. These flags were on little cane sticks that were varnished with Chinese lacquer, and in that way the fellow got his dermatitis.

We all knew that Chinese lacquer produced dermatitis, but there wasn't at that time a single case reported in English literature. If we had gone ahead and if Weber had not found the cause of this dermatitis, the fellow might very well have been disabled for that business. If he had then moved to the country and become a farmer, he would have gotten well under exposure to sunlight and fresh air and good, healthy country food, and that would have been regarded as one of those cases of systemic eczema.

I have another illustration of my own person. A few years ago I developed a little dermatitis on my thighs and legs. It didn't bother me much. I used to rub it and let it go through the winter. In the spring it got well. The next winter it came on again. This time it got bad enough for me to sit up and take notice. After considerable time I discovered the cause of that eczema. What was it? I moved out on the sleeping porch, and the sheets were cold, so I had Canton flannel sheets put on my bed. When I took off the Canton flannel sheets the eczema got well.

If it takes a dermatologist nearly two years to discover the external irritant that is causing dermatitis on his own person, then you cease to wonder that they overlook it in others or sometimes fail to find it.

An extremely ingenious illustration of that sort of thing was made by Oliver of Chicago. He worked out the fact that a good many people are sensitive to some of the pigments used in the rotogravure section of the Saturday and Sunday newspapers. There is a distinct Sunday newspaper dermatitis. After you give the solution such things seem easy, but they are extremely confusing.

There are any number of things that may cause eczema, of course. There are too many for me to try to repeat them out of my head. They may be physical or chemical or mechanical. One great list is that of the vegetable irritants. One of the first things to remember is always to be on the lookout for them.

As external irritants, the Bureau of Plant Industry gave me about a year ago a list of 113 plants that were known to cause dermatitis in America, and I know a good many more. They range from such things as poison ivy, which is damned in its name through the cursed crowfoot, evidently unpopular, to such succulent things as asparagus; and one of the worst is the innocent plant, that symbol of youth and beauty and dalliance, the primrose. "The primrose on the river's brim." Who would ever think of that as producing eczema? But that is worth a good many hundred dollars to every city dermatologist in January and February in our part of the country. It is perhaps, after ivy and sumac, the commonest cause of external irritant dermatitis in the well-to-do.

It would be consuming time beyond all measure to undertake to give in detail these various irritants. This same man, Weber, has prepared a list of them that has been reported in the literature that takes up about twelve double rows of typewritten paper. The thing you have got to do is to be constantly on the alert for external irritants in the production of eczema. If you do that, you will have the satisfaction of finding them on a great many occasions.

Now I do not mean to say that external irritants are the invariable cause of eczema. They are a factor in most of the cases, and their importance is the thing that I refer to just now as the important trend in the later concept of eczema.

Of course, there is another factor. You will get a primrose dermatitis and I won't, and vice versa. There is a factor of sensitiveness there that we have to consider which, of course, has not been entirely worked out. I don't think that we can entirely throw out metabolic and endocrine, perhaps vascular disturbances and nervous disturbances. It is very significant, though, that while metabolic disturbances as a cause of eczema have been the object of our search since we have had modern methods of research, we have gotten no uniform findings, we have found no uniform metabolic disturbance to accompany eczema. And if it is a factor, it is a factor, to my mind, of extreme rarity.

The thyroid is perhaps at times a distinct factor in producing susceptibility to eczema. That has only been in cases, in my experience, where there has been distinct and unquestionable evidence of hypothyroidism. That is an extremely uncommon occurrence. I won't say at once that the autonomic nervous system is not a factor in producing lowered resistance and thus predisposing one to eczema. The autonomic nervous system so affects the condition of the skin that it may play a considerable part in the production of eczema. But it is an intangible thing and we don't know much about it yet.

I think in our recent concepts of allergy we have gotten a very important clue to the hypersensitiveness that results in eczema in a great many cases.

That is not simply a working hypothesis; it is a thing that has been worked out experimentally by many men in many parts of the world. It notably applies to ringworm eczema. I refer to the fact that ringworm eczema occurs on the hands and on other parts of the body than the feet very frequently, but it is practically impossible to demonstrate the fungus in those cases. It has been demonstrated, and perfectly clearly and conclusively, I should say, that ringworm eczema can be produced by an allergic manifestation in susceptible individuals. Bloch, of Zurich, has gone much further in showing that hypersensitization to primrose can be produced by sensitizing with primrose antigen.

Bloch's experiment is this: He has taken a considerable group of men who didn't have asthma or urticaria or any manifestation of eczema in their histories or in their family histories, and sensitized them to primrose in this way: the skin was rubbed to the point of producing a slight abrasion, and then a strong extract of primrose applied to that surface. By repeating that numerous times in some of the cases and less numerous times in others, he was able to establish a definite sensitization to primrose in those people, so intense that it amounted to an extreme degree of idiosyncrasy. Acquired hypersensitiveness is exactly the same.

The facts are very strong for making us think that in allergic reaction we have the explanation of a great many of the cases of hypersensitiveness to eczema.

As I have said, the main point is to recognize that in eczema you have dermatitis. That "eczema" is a good deal like the word "kodak". It is a good, well sounding word that you easily remember, but it is simply a specific name for a generic thing, simply a name for dermatitis, and in making your diagnosis, when you have made a diagnosis of eczema without finding out what is the cause, you might just as well say the man is sick; you have made no diagnosis at all.

The main point is to work out what is causing it. That is no simple problem. As I have told you, it took me two years in one intimate case to work it out myself, and there is no such thing as treating eczema by taking a look at the man and telling him to use this or that and let him go.

Your diagnosis of eczema may satisfy him, but you won't satisfy yourself if you are intellectually honest and not stupid.

How about the treatment of it? There is one point there that I want to bring out. That is that acute eczemas are acute inflammatory processes and they can't be handled like a mule; they kick back if you treat them that way. Whenever you have an acute eczema, the first thing to do, and the only thing to do when you know where you are, is to treat them gently and sweetly like you do enemies of whom you are afraid. Next, use palliative applications.

One of the situations that gives the specialists in skin diseases the best opportunity to show how skillful they are is radical and extreme treatment of inflammatory processes where dermatitis has been exaggerated in trying to cure it. Our work in large part in those cases is to give them a chance after they have been treated with irritating applications. If you don't know what you have got on the skin (and you don't usually know when you have first seen a dermatitis), don't put some strong antiseptic or some strong irritant on it. Leave iodin and the mercurials and things of that sort alone for a little while, and I am sure your patients will be grateful.

The first thing to remember with your eczemas is not to use antiseptics and irritants to start with. Use bland applications. The one I use constantly is aluminum acetate solution. That is the old Burow's solution of the Vienna clinic. That eight per cent solution of aluminum acetate is a National Formulary preparation. The strength to use is one to sixteen, an ounce of aluminum acetate eight per cent solution to a pint of water. Now don't think you can use straight one-half per cent aluminum acetate powder, because it doesn't dissolve. Get the eight per cent solution and dilute it with water. For wet dressings that is, one case and another, the most useful thing that I know.

There are many other things. The old lead and opium wash, before it was so hard to get laudanum, was a good thing, but I don't think I have used that in ten years.

Ordinary normal saline solution is a good solution. I guess boric acid is all right, though I very rarely think to use it.

If you must use an antiseptic, I mean if you are so minded that you have got to have an antiseptic, use about 1 to 3000 potassium permanganate solution. That is bland.

Use that sort of bland solution as wet dressings until the condition gets better, distinctly better. When you can't use that, put on a bland ointment. There is nothing better than a cold cream and zinc oxide ointment. Like all oldish people, I get to use certain things a little bit. I use hogsheads of that aluminum acetate solution, and I use a typical, plain zinc ointment of the following formula: About five drops of ichthyol, half a gram to a dram each of zinc oxid and calamine, and cold cream to make an ounce.

Anybody who has got it in for the dermatologist wonders why in the world that complicated prescription? Why isn't zinc ointment just as good? It is. The ichthyol, of course, is of no use except that it gives a brownish skin color, and the calamine is no better than zinc oxide except that it is pinkish and gives the pink tint that you want. If any of you get an eczema on your face you would rather have a skin-colored ointment than a ghastly white one. That is the only advantage over plain zinc ointment.

Use things of that sort until you get your patients better.

The time when it requires judgment and skill is when they are sub-acute and you want either to stimulate them or you have to use antiseptics to get rid of pus infection or ringworm infection.

In beginning your stimulants, begin with extreme caution. The ones that I use most are ammoniated mercury and tar. Instead of beginning a dram to the ounce, I begin with about five grains to the ounce. In this ringworm eczema which you are called on to treat every day you have to use antiseptics. Carry them along at the start with such things as aluminum acetate solution and potassium permanganate solution. They are so useful that it is wortn the trouble that putting on wet dressings requires. After they get better you can use other things.

Everyone has his favorite remedy for the chronic ringworm infections, and you know what that means; it means that nobody has a satisfactory one. Among the things to use in the chronic cases, the classical remedy is Whitfield's ointment. Whitfield's ointment is 30 grains of salicylic acid, 60 grains of benzoic acid, to an ounce of cold cream or zinc ointment, and it is effective in ringworm. You should not being to use it full strength. Begin it diluted with vaseline of parts. Then increase it 1 to 3, 1 to 1, and full strength. That is the way to do that sort of thing. The wet dressing, painting witn a one per cent solution of potassium permanganate, and Whitfield's ointment, ammoniated mercury, and things of that sort will carry through the sub-acute stage. Then you have left that chronic infection between the toes. Whether that is gotten rid of or not permanently I doubt, because if you get rid of it you get it again. For that we use various things. Whitfield's ointment is good. It has the disagreeable quality of being mussy and interfering with other applications. Potassium permanganate in the strength of 1 or 2 per cent is useful. Gentian violet in 1 or 2 per cent solutions is useful.

One of my favorites, to which my attention was called by a man who had an orchard, is the lime and sulphur solution that they use for spraying trees for fungus in orchards. You can buy it by the five-gallon jug, I think, for about a dollar a jug, and that is about four times as strong as the official solution, Vleminckx's solution. My experience is that the jug form and the druggist's form are equally efficient, but we will take the official form, Vleminckx's solution. Vleminckx's solution is a National Formulary preparation. That is a solution that gives off sulphurated hydrogen and has other sulphids. It is a strong parasiticide and is very useful in those cases. But, as I say, those infections between the toes, if they do not get well, recur.

Everybody wants to know how to get rid of them. It is regarded as rather an aristocratic disease because it is supposed to be a golf club disease, but as a matter of fact it occurs in all sorts and conditions of people. Trying to avoid an infection that is already in about sixty per cent of the population is just about as futile as trying to avoid dust, and I don't know any way to tell a man how to get rid of or avoid the possibility of ringworm infection.

These are some of the high points in the course of eczema, if not in the last hundred years, at least during the time of my memory.

As I stated at the start, eczema is a mound at which we have been digging for about a hundred years, and as soon as we found anything concrete we took it out. That means that logically eczema will in time disappear, but thank heavens we are not logical. It is a nice old name, it is an old friend, and I should be glad to keep the name if we just remembered that it represents dermatitis and nothing specific.

THE EVOLUTION OF UROLOGY*

C. F. ANDERSON, M.D., F.A.C.S.

IN THIS brief resume of the evolution of urology it will be possible to mention only a few of the many discoveries and achievements that have had to do with its history and progress. Centuries ago urologists thought they were able to tell what was wrong with the patient simply by ocular studies of the voided urine. The use of this method was not limited to pathological conditions of the urinary tract, but more remote disturbances were studied and diagnosed. They are accredited with thus recognizing such conditions as pregnancy, hysteria and, no doubt, all other diseases known to them.

During the time of the Salernian School, near Naples, all physicians were practically urologists as they depended largely upon the urine for diagnosis and prognosis, and the urinal became the insignia of the physician and the emblem of medicine.

The earliest records, the Papyrus of Ebers—manuscripts of the Egyptians, about 1500 B. C.—show that the treatment of urological diseases was at first exclusively medical. Ancient writings have been found, tablets of brick, clay and wood have been unearthed and preserved, which are medical prescriptions for urological diseases. It would seem that from the very beginning medicines were first given a thorough trial and at the present time the process of evolution has not completely eradicated this idea in some quarters.

The writings of the ancient Hindus, about 1000 B. C., show that the first surgical operations ever attempted were on the urinary tract. The ancient custom of circumcision, no doubt, dates from this time. As early as 600 B. C. the Hindus performed perineal section for vesical calculus. On account of the prevalence of stone in India, then as well as now, many think that the operation of lithotomy originated there and the knowledge of it came to Greece by way of Egypt.

Hippocrates, the father of medicine, who lived from 460 to 377 B. C., in his writings, made many references to urological subjects. He described the development of bladder stone from a small nucleus, a fact now well recognized. He recommended nephrotomy for abscess of the kidney in these words: "As soon as swelling has appeared in the region of the kidney one should incise it down to the kidney." Today the perfected and life-saving two stage operation is of value in extreme cases of pyonephrosis.

Hippocrates recognized cystitis by the presence of bran-like particles in the urine, and spoke of urethral abscess. He was the first to admit that certain surgeons could do urologic surgery better than others. In the famous Hippocratic Oath is found a clause in which the person taking the oath promises to refer all lithotomy cases to "men who are practitioners of the work". By this statement he, no doubt, sowed the first seeds of specialism. Indeed, he was not only the father of medicine, but the father of specialization in medicine.

Celsus, who died at the beginning of the Christian Era, was a compiler of Ancient Roman medicine. He mentioned urethrotomy for impacted stone and the relief of urinary retention from various causes, including senility (prostatism) by catheterization. He presented the symptoms of bladder stone and described in detail the operation of lithotomy with its after care.

Galen (131-210 A. D.) wrote on this same subject and described his S-shaped catheter. The work was further carried on by Caelius Aurelianus in the fourth century A. D., who wrote of various bladder diseases and described a "stone searcher" for the diagnosis of vesical calculus.

It is thus seen that in the beginning of the middle ages diseases of the urinary tract had been treated medically for two thousand years and surgically for one thousand years. Diseases of the urethra, prostate, bladder and kidneys were already known and many of them had been operated.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

From the fifth century on through the middle ages practically no medical or surgical progress was made. As Guiteras said, "This period was characterized, as we know, by a decadence of surgery, when this art was relegated to the barbers and charlatans, while medicine for the most part was in the hands of the monks, who disdained surgical operation".

During the Medieval Period, and even later, the lithotomists were reaping a harvest. The town of Perugia in Norcia (Italy) was famous for its lithotomists. They were called to various parts of Europe to operate. From these Italian lithotomists the Calots of France learned to "cut for stone". Germain Calot operated on Louis XVI after having demonstrated to his majesty the operation on a criminal.

A monk by the name of Frere Jaques, who was referred to as a "bungling experimenter", in 1697 introduced a new operation for stone. While he was much more scientific and his operation based on anatomical principles, he, too, became a wandering lithotomist and was finally exiled from Paris, after "cutting for stone" more than five thousand times, because most of his patients died. Jaques' operation was modified and improved by William Cheselden, an English surgeon, who is said to have done the operation in fifty-four (54) seconds. He, no doubt, exerted a great influence on John Hunter, one of his students, who later attracted attention to venereal diseases.

Hugh Young says: "It is very evident from a study of the clinical work of Hunter that his private practice was largely genito-urinary in character. Most of his students were largely interested in genito-urinary surgery. I need only to refer to John Abernethy's celebrated treatise on syphilis, Sir Ashley Cooper's classic on the testicle, Sir Edward Home's two volumes on hypertropied prostate gland and James Wilson's anatomic researches on the external sphincter."

During the fourteenth century scientific surgery again started up and gradually extended over Europe. At this time Jean Pitard founded, in Paris, the College of Saint Come.

Movable kidney was discovered in 1497 by Mesure of Venice.

Ambrose Pare improved the technique for stricture operation. He also published his book, "Surgery", in 1564 and with Hunter, Sylvester and Harvey helped to disprove and overthrow many of the older ideas and theories.

I am somewhat surprised at the number of bladder stones encountered in the early history of urology as compared with the present findings; moreover, the ease with which they were apparently diagnosed by symptomatology alone. Then, as now, urologists were interested in discovering some way to dissolve stones. Everything was tried, from acids, alkalis, various waters and gastric juice to goat's milk, without success.

Sanctorius in 1625 first constructed a crude lithotrite. This was improved upon by Jean Civiale whose second instrument was designed to crush the stone. Modifications and improvements were made by Leroy d'Etoille, Meyrieux, Jacobson and Henteloup. Carnay of France produced the first aspirator for the removal of the stone fragments after crushing. This work was taken up by Guyon of France, Thompson of England, and finally in 1878 Bigelow of America so perfected the instrument that it was possible to crush and remove the stone at one sitting. Today we have the perfected instrument operated under vision.

In Germany and Austria much progress in urology was being made. To quote Bransford Lewis, "Ultzmann studied and elucidated the subject of neuroses of the urinary organs; Dittel wrote and operated well on surgical affections of the genito-urinary organs; Grasnfeld materially advanced the position of urethroscopy; Oberlaender promoted urethral pathology and therapy and made valuable contributions to our literature; Casper, in addition to his cystoscopic work, studied the functioning powers of the kidneys in relation to contemplated surgical measures; Gaston Simon first performed nephrectomy; Hahn demonstrated the feasibility and value of nephrorrhapy; Israel introduced a formidable array of renal operations, recounted in his elaborate treatise on the subject; Frendenburg popularized the Bottini operation; Von Zeisol, Kollmann, Finger, Wassidlo, Frank and Lewin were others whose names must not be omitted. If we admire the accomplishments of these and many others that might be mentioned, how shall I adequately express the esteem in which the father of modern cystoscopy, Max Nitze is held."

Urology may well be divided into the pre-cystoscopic era and the post-cystoscopic era. The real development of urology did not begin until well into the nineteenth century. While the cystoscope is, no doubt, the most important contribution to the evolution of urology there are other factors which made progress possible. Among these are: the development of the microscope; the discovery of anesthesia; the discovery and classification of bacteria; urinalysis, blood chemistry and kidney function tests; and last, but not least, the discovery by Conrad Roentgen of the x-ray, the perfection of which has brought the urologist an indispensable mechanical aid.

Caulk has alluded to roentgenology and urology as the Siamese twins in medicine. Many urological conditions are not possible of diagnosis without the aid of the x-ray. It is fortunate that many of these discoveries were made during the era of Listerian antiseptic surgery which commenced in 1865.

E. O. Smith said: "Urologic diagnosis rests on a tripod of mechanical aides; the microscope, the cystoscope, and the roentgen-ray. With the proper application of these agents, used singly, in pairs or all three practically all pathologic conditions found in the urinary tract can be located, recognized and classified."

The evolution of the cystoscope and endoscope dates from the pioneer work of Bozzini of Frankfort in 1806. His instrument, the "Lichtleiter", was not favorably received. The vesical speculum was intended only for the female bladder as examination of the male bladder was considered impossible. In 1826 Segalas of Strasburg presented to the Royal Academy of Science of France his "Urethro-cystic" speculum. This instrument had little of practical value to recommend it. Both these instruments consisted of straight tubes with light reflected from without.

John Fisher, of Boston, in 1827 presented a more complicated instrument, which also failed. Avery, Cazenave, Gessler, Malharbe and Espezee all became interested in edoscopy and made improvements and presented instruments in an effort to further progress, without avail.

In 1853 Desormeaux, who has been given the title of "the father of endoscopy", presented the first practical endoscope to the academy of medicine in Paris. His instrument contained a lamp which burned alcohol and turpentine and a system of mirrors for reflecting the light. Haken, in 1862, proposed the use of a metallic tube, blackened on the inside, into which the light was reflected from a head mirror. But little progress had been made up to this time, all instruments being built along the same lines, a tube with light reflected from without. Julius Bruck of Breslau in 1867 inaugurated a new era by placing the light, in the form of a platinum loop, on the distal end of the instrument. The disadvantage of this, of course, was the terrific heat caused by the exposed platinum loop. Although men in all countries were working on this instrument and idea, it took ten years to overcome this difficulty.

It remained for Max Nitze in 1876 to present his water cooled instrument lighted by a platinum loop. The first lens system was made for Nitze by Beneche, an optician in Vienna. The first instruments were made by Diecke, a Dresden instrument maker. Later Nitze placed the manufacture of the instrument in the hands of Leiter of Vienna and the Nitze-Leiter instrument was presented before the medical society in 1879. The Edison incandescent light was first used in a cystoscope by David Newman of Glasgow, although it did not become generally used until four years later. The improved instrument of Nitze furnished the model from which all our present day cystoscopes of the indirect type are patterned. Numerous makes are now on the market and in general use, such as the Brown-Berger, Bransford Lewis Universal, McCarthy Panendoscope and many others. Of the direct vision type Braach's instrument is outstanding. Cystoscopes are made in various sizes and for different purposes. Some are small enough for use in infants, of which the Butterfield instrument is an example.

In retrospect one is impressed with the great amount of work done by so many individuals and the enormous time required in the evolution of the cystoscope. This shows that these men were imbued with the idea that once the bladder was invaded and studied the whole urinary tract could be mastered. The instrument was first suggested in 1806, and while it took more than an hundred years for its evolution and required the efforts and ingenuity of some of the most brilliant minds of the profession and the combined resources of surgeons, chemists, dentists, opticians, electricians, silversmiths, glass workers, and finally our own wizard Edison to complete the job, who can evaluate the work done, either in terms of pain relieved or lives saved.

I have taken much time in relating the evolution of the cystoscope because I think it is probably the greatest invention in medicine. In fact, it has opened a field of diagnosis and treatment which has made the specialty of urology. By its use the following procedures have been made possible: bladder inspection, intravesical surgery, excision of the median bar of the prostate, punch operations, Ronguer work, fulguration and cauterization, radium and other applications, ureteral catheterization, unilateral kidney function test and intravesical photography.

After the perfection of the cystoscope and the ease with which the ureters in both male and female were catheterized, the study of the upper urinary tract was begun in a more scientific way. Tuffier in 1897 was the first to use an opaque catheter and roentgen-ray. Klose in 1904 suggested the use of bismuth injected into the kidney pelvis for pyelography. In 1906 Voelcker and Von Lichtenberg brought out collodial silver as an opaque medium. In 1915 Burns reported good results from thorium nitrate. In 1918 Cameron advocated sodium iodide and in the same year Weld introduced sodium bromide. At the present time sodium iodide is the one most extensively used and is very satisfactory, being free from local irritation and toxic effects. A further step in progress was first suggested by Kidd, who, to make it germicidal added oxycyanid of mercury to his pyelographic medium, thus producing a diagnostic and therapeutic solution. Cunningham, Graves and Davies found that mercuric iodide would combine with sodium iodide and make such a solution.

We next find efforts being made to produce a solution that could be used intravenously, by means of which the urinary tract could be visualized. In 1923 Osborne, Southerland and Scholl and Roundtree first used a 10 per cent solution of sodium iodide. Several German workers repeated these studies and made others, with but little progress. The first substance to be practical was one used by Reseno containing sodium iodide bound to urea, but this caused some reaction. Some very recent work done in Germany was reported by M. Swick in a paper read before the Genito-Urinary Section of the New York Academy of Medicine January 15, 1930, and published in the February number of the American Journal of Surgery. While this was a preliminary report and further study is now in progress, it bids fair to be one of the greatest discoveries of the age. The substance used, called uroselectan, is an iodine compound, easily soluable in water and non-toxic when given intravenously. X-ray pictures show a complete outline of the urinary tract. The principle upon which this test is based is that from 90 to 100 per cent of the uroselectan is excreted unchanged from the body within eight hours. Quantitative determination of the excreted substance can form the basis for a function test.

By the combined use of the cystoscope, x-ray and a shadow casting fluid we are able to discover abnormalities in shape, size and location of the ureters and the kidney pelves, to localize ureteral and kidney stones and to demonstrate renal tumors before they can be palpated. Hydronephrosis, tuberculosis and pyogenic infections all have more or less pyelographic characteristics.

Renal function next attracted the attention and study of urologists. Many tests were offered, from cryoscopy, advocated by Dresser in 1892, to electrical conductivity of the urine, studied by Dawson Turner in 1907. Of the many ideas brought forth during this period the only one that has withstood the test of time is the use of indigo carmine, first advocated by Voelcker and Joseph.

In 1910 Roundtree and Geraghty discovered, mostly by accident, the phthalein test which is in general use today. It is simple, efficient and satisfactory.

In the time allotted it is obviously impossible to give due credit to many who have made valuable contributions to the evolution of urology. I pause here long enough to pay just tribute to two of our immortals. While they were both general surgeons, much of their time, effort and work was devoted to genito-urinary surgery. Their reputations extended far beyond the confines of the Old Volunteer State and their memories will be everlasting. I refer to Dr. W. T. Briggs and Dr. Paul F. Eve, Sr.

It may be interesting to briefly outline the formation of the American Urological Association into whose custody the further evolution of this great specialty has been entrusted. It came into existence on Washington's birthday, February 22, 1902, as a successor to the New York Genito-Urinary Society. The first meeting was held at Saratoga Springs with Dr. Ramon Guiteras as president and with twenty-seven original founders. According to the 1927 roster it had nine branch societies with a total membership of 772, representing forty-two states of the Union, the District of Columbia, Canada, Cuba and Porto Rico and with an honorary list including distinguished urologists of other countries. Each year there are fifty men elected to membership and in 1927 there were 118 on the waiting list. The society met with the American Medical Association up to and including 1910. Since that time it has held its annual meetings entirely separate and apart from the American Medical Association.

Some of the papers read at the earlier meetings were published by the American Journal of Urology. From 1907 until 1920 inclusive the transactions were published in book form. Since 1920 all papers have been published by the American Journal of Urology, now the official organ of the Society.

What have been the practical results in the wake of the evolution of urology? Indirectly, we see the influence of the endoscope and cystoscope in other specialties as the development of the pharyngoscope, bronchoscope, gastroscope and proctoscope. The same principle was used in the periscope of trench and submarine warfare in the World's War.

While the difference in mortality and morbidity in urology of yesterday as compared with that of today is not due to the efforts of urologists alone, statistics as long as the eye can reach can readily be produced to show that they have played the major role.

Cabot has aptly said: "The best results will fall to the surgeon who supervises from beginning to end the investigation and who applies the remedy, rather than to the operator who may be eternally confounded by the error of an assistant." Louis Schmidt said: "It can be said with truth that one of the greatest advances in urology has been the creation of the urological specialty in medical practice."

Improvements in surgical technique, including pre-operative and post-operative care, have had much to do with lowering the mortality in urologic, as well as in other surgery. Complete and thorough pre-operative study has eliminated all exploratory operations of the genito-urinary tract. No longer are they necessary.

Mention may be made of a few of the many operations that have either been restricted or entirely omitted. Circumcision for relief of incontinence and sexual abnormalities is no longer done. Operations for varicocele have been minimized. Extensive operations for carcinoma of the penis have been supplanted by minor ones or by x-ray and radium therapy. Many undescended testicles which were formerly sacrificed have been placed in the bottom of the scrotum. Stricture of the urethra, formerly treated by internal or external urothrotomy is today gradually dilated. Benign tumors of the bladder no longer require open surgical operation, but are treated by fulguration, while with many of the malignant tumors cystoscopic application of radium is used. About 50 per cent of all stones in the bladder are now removed by litholapxy. Many formidable operations have been simplified and minor operations have taken the place of major ones. As an example, I need only mention Caulk's punch operation for the relief of prostatism. Stones in the ureter are now removed in about 90 per cent of the cases by cystoscopic manipulation. Strictures and kinks of the ureter are likewise corrected. The acutely infected kidney is no longer operated, but is drained by the ureteral catheter. Renal decaptulation is no longer practiced for nephritis.

Mortality in urologic surgery has been markedly reduced. As late as 1887 Thompson stated that successful prostatectomy was unknown. Up to twenty-five years ago the death rate ranged from 15 to 50 per cent; today, as you know, many distinguished urologists have reported large series without a death. The mortality in the hands of the average surgeon should not exceed 3 or 4 per cent. In 1912 Guiteras reported a mortality of 10 per cent for nephrotomy and 30 per cent for nephrectomy and stated that in tumors it might reach 50 per cent. At the Mayo Clinic 863 nephrectomies were done with a 2 per cent mortality. Young reports an operative mortality of 0.89 per cent in 112 patients.

Cancer has received its full quota, if not more, of study and work by urologists with but little progress. Today cancer of the prostate and bladder is the bane of our existence. Several years ago the American Urological Association established a cancer research department for the classification and study of this dread disease. From this it is hoped that better things will be forthcoming.

Schmidt rightly observes "that progress in urology is to be measured by outstanding scientific discoveries and their influences rather than by dates or periods". I have, therefore, traced urology, from the earliest efforts in medicine, by the discoveries and achievements which have led men on to further endeavor and progress, with some success, to the time when modern urology, as we know it today, takes up the burden with renewed hope and a brighter future made possible by the discovery and perfection of the cystoscope.

DISCUSSION

DR. GEORGE R. LIVERMORE (Memphis): Mr. President and Gentlemen: Dr. Anderson has gone back over the history of urology in such a splendid manner that it opens up a page of wonderful achievement and a galaxy of names that stand out on this page in such glowing light that it makes me proud to know that I am an urologist. I can only go so far as to touch upon some of the points that he has mentioned and to bring forward some of the names of our wonderful leaders who have done so much to advance urology which he did not have the time to mention.

In regard to cystoscopes, it is rather remarkable that one of our own Americans, John Fisher, of Boston, was very instrumental in the beginning of the cystoscopy era and made a cystoscope which was practical in 1827.

Cystoscopes have been improved and their technic added to by such men as Brown, Berger, McCarthy, Lewis, Braasch, and Hugh Young.

These instruments are made now so that all kinds of operations can be done on the bladder and ureter, and nearly all of this technic has been evolved by Americans.

With the McCarthy panendoscope, which is one of the more recent of these instruments and the most wonderful, it is now possible to use very large instruments, larger than through any other cystoscope.

Although Tuffier was the first to use the opaque catheter and x-ray in the examination of the kidney and ureter, it was amplified by Schmidt and Kolischer of Chicago and their work has added much to our knowledge on this subject.

Although pyelography, the injection of the kidney pelvis, was first used by von Lichtenberg in Germany, this has been improved and made much safer by Americans, notably by Keyes, Cunningham, Graves and many others.

Functional tests were first developed abroad by the indigo-carmin test, which is not nearly so satisfactory as the phenolsulphonephthalein test of Geraghty and Roundtree, and nothing like as simple or practical, therefore, I feel that the

Americans deserve most of the credit for the improvement in this line.

The greatest achievement in urology, as Dr. Anderson has brought out, has probably been the invention of the cystoscope, but equally with it almost stands out Bier's work on fulguration of bladder tumors, which has diminished operative procedures and enabled us to destroy many of these growths which would otherwise require very extensive operations to be done.

I would also like to make a few remarks about intravenous therapy. In urology it devolved upon Young and Davis and their associates at Johns Hopkins to develop mercurochrome as one of our aids in the treatment of infections of the urinary tract as well as general infections. Although mercurochrome has been given a black eye in many localities, it is no cure-all, but certainly in selected cases it does work wonders.

Prostatectomy has been made very much safer by the urologist, and Young deserves probably more credit than any other man for his decompression work, by draining the bladder carefully and gradually so as to reduce the load on the kidney and cause elimination so that these patients could be brought into shape to stand a serious operation and reduce the mortality to such low figures as Dr. Anderson has brought out.

Also, in the development of less serious operations on the prostate, it has fallen to the lot of Young, Geraghty, Caulk and Collins. Young devised a punch some years ago for punching out a piece of the prostate; Geraghty also devised one. Caulk came along and added a cautery to the punch which lessened the hemorrhage, and Collins came out with an electrotone, which is a kind of fulguration current which cuts away the tissues by means of an electric needle, and now we have the endotherm knife, which can be used for the same purpose.

All of these diminish the seriousness of the operation and have reduced the mortality and morbidity.

Kidney surgery has been wonderfully improved and the mortality lowered. By means of the cystoscope and ureteral catheterization we have been able to get these patients in so much better condition, and hence the mortality of kidney surgery is very low.

Intra-ureteral manipulation through the cystoscope has been largely developed by Americans and the instruments that have been used for the removal of stones of the ureter and dilatation of the ureter have been evolved in America by such men as Walther, Cunningham, Bumpus, Dourmaskin, Bugbee, and Bransford Lewis.

DR. PERRY BROMBERG (Nashville): Dr. Anderson has presented the history of urology and its evolution in a most satisfactory and orderly manner, and has brought to your attention step by step the many advances which have been made by our predecessors in urology. I wish in this discussion merely to call your attention to that generation of capable and pioneer surgeons, just preceding us, who have elevated the Department of Uology to its present high degree of perfection.

In our country there was Bigelow, whose operation for litholopaxy was not only the envy of his teachers, eminent French and British urologists, but was at the same time the marvel of his students in the Harvard Medical School, where he was Professor of Surgery, though his chief interests were uroolgical ones. There was Gross, whose textbook on diseases of the genito-urinary tract contained the first account in any language of the distribution of urinary calculi. There was Philip Physich, who was one of the first Americans successfully to employ surgical interference as a means of treatment of the hypertrophied prostate.

The names above mentioned were not urologists, for urology as a distinct specialty was not yet established. Even as late as 1918, Dr. Hugh Cabot said:

"Urology as a specialty is still young. It is not more than a generation since there have been in America men of eminence who devoted themselves exclusively to this subject. The last generation, however, has developed in this country a large group of urologists, who are authorities not only in this country but throughout the world, and it is to them urology owes its greatest debt of gratitude. No longer is it necessary to attend foreign clinics to learn the refinements of diagnosis and treatment, for the clinics in America equal or excel any in the world."

Dr. W. H. Van Buren, of New York, in 1877 was the first in this country to teach diseases of the urinary system, in connection with the Chair of Surgery. Prior to this date there was but one treatise in America, that of Gross, dealing with urological subjects. Gross' original work appeared in 1851 and the last in 1876, and at that time there were only two other works of the kind in the English language. The contrast offered by the status of urology today with that mentioned by Doctor Anderson may be seen by the fact that every American university now has its department of urology, and actual institutes have been established in several cities in this country.

The present generation is greatly indebted to the fathers of this specialty just gone, and their names and accomplishments will never be forgotten. Time will not permit a full review of those great personalities whose impress upon the times elevated urology until it has become the equal of any specialty in surgery. I wish I could review the life and accomplishments of those who have contributed so plentifully to the knowledge which we now enjoy, but I cannot refrain from mentioning our great debt to Doctors Van Buren, Cabot, Keyes, Otis, Alexander, Watson, Senn, and a host of others who pioneered and cleared the way for us.

EVOLUTION OF PEDIATRICS*

Dr. I. A. Abt, Chicago, Illinois

THE special study of the diseases and hygiene of infancy and childhood began with the renaissance of medicine in France. *Bichat* (1771-1802) and his predecessor, *Pinel* (1756-1826), attempted to make diagnoses on the basis of pathological changes and carefully interpreted symptoms. Bichat was the founder of pathological investigation in France and he is mentioned as the man who set up a land mark between the two centuries in medicine. In the same group must be mentioned *Corvisart,* whose teachings were based on morbid anatomy. He was a pioneer in the studies of diseases of the heart and he reintroduced the teachings of Auenbrugger on percussion. Corvisart's most distinguished pupil was *Rene Theophile Hyacinthe Laennec.* His complete studies on auscultation marked the beginning of accurate physical diagnosis. His clinical and pathological description of tuberculosis constitutes the most masterly chapter in clinical medicine. Among other men of this period who were students of Corvisart and Laennec may be mentioned Bayle, Andral, Bouillaud, Chanel, Piorry, Brettoneau, Rayer, Cruveilhier and Trousseau.

Pierre Brettoneau (1771-1862) was a distinguished physician of this period. He is best remembered by his contributions to the knowledge of diphtheria and typhoid fever. Tracheotomy for the relief of laryngeal stenosis was first performed by him. He wrote the "Memoires on Diphtheria." In the introduction he says "It is the opinion of Laennec that diseases can not be more certainly distinguished than by their anatomical characters. Deeply imbued with this opinion I have never neglected any opportunity of multiplying my post-mortem researches during the epidemic which I have been called upon to observe. It is only by following the changing aspect of every morbid lesion and by comparing the results of a great number of observations, made at different times and places, that it is possible to determine the alterations which belong to one and the same disease." Scientific history of diphtheria began with Brettoneau. His memoirs containing his clinical and pathological descriptions of diphtheria continue to be a classic in medical literature.

Trousseau was a student of Brettoneau. He was a far-famed clinical teacher and a practitioner of great renown. While pediatrics was not his major interest, he published important contributions on this subject. Though these are a subsidiary portion of his volumes on internal medicine, nevertheless, no pediatric contributions had appeared under more brilliant auspices. During this period, which we have been considering, it fell to the lot of *Charles Michel Billard* (1800-1832) to delve into the field of "Children's Diseases." Before this time consideration of this group of disorders was incidental and desultory. Billard systematized and organized the knowledge of diseases of young life and in accordance with the custom of the time he attempted to correlate the clinical data with morbid anatomy. In 1828 he published his treatise on the diseases of new-born infants and nurslings.

In his preface to the first edition Billard says that one day, while reading Morgagni, a favorite author, he was particularly struck by the statement, "How vast and new is the space that is still open before us for the study of the diseases of young children." From Morgagni's day, Billard continues, many men have attempted to extend the boundaries of science, and he desires to glean the facts that have escaped the notice of his predecessors and to add some recently ascertained truths. In doing this he hopes to render some service to humanity.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8 9, 10, 1930.

Continuing with his personal remarks he says that for a year he had occupied an important station at the Hospital for Foundling Infants in Paris, and observed with close attention the children in that institution. When a patient died he availed himself of the opportunity thus afforded to examine by dissection all the organs, and to ascertain the causes and seat of each disease. He says that in this manner has the wish of Morgagni been fulfilled. "I have been able by these methods," he says, "to compare the symptoms observed during life, with the anatomical lesions by which they have been produced."

Billard was guided and directed in his work by the great founders of pathology. The principal object of his book, he says, is to exhibit the peculiar characteristics of infant diseases, and to consider them in relation to the alterations which the organs have undergone. Finally, he states: "I have written this book with the independence of one who would not draw from existing doctrines anything, however positive, the truth of which could not be proved by established facts or by natural analogy. In this I have but imitated the great number of those who have cultivated science at the present day." This essay, then, carries with it the impress of the age and the spirit of contemporaneous philosophy. Those who read Billard will find his book a source of knowledge for pathological and clinical facts.

Before Billard, the influence of the teachings of Bichat and Laennec was already felt beyond the borders of France. Notably, a group of Irish physicians—among whom may be mentioned Cheyne, of Cheyne-Stokes fames; Corrigan, known through the type of pulse described by him, and Graves—practiced medicine based on the foundation of pathology.

John Cheyne (1777-1836) wrote several chapters on diseases peculiar to children. He stated that the safest foundation for reasoning on the nature of disease is laid by anatomic investigation, and this, with little exception, formed the basis of his dissertations.

He refused to describe chorea in his textbook, because he had never seen a fatal case and consequently in the absence of pathological data he did not feel qualified to describe the disease.

It is impossible to mention all of those who contributed to the Pediatric literature before the period which we have just described. Among these may be mentioned Walter Harris, Thomas Thatcher, Niels Rosen von Rosenstein, George Armstrong and Michael Underwood. These contributions dealt mostly with clinical descriptions and therapeutic speculations and while they are of great historic interest they lack in intrinsic value because they were not based on a knowledge of pathology. Barthez and Rilliet published a three volume work on Pediatrics with anatomic charts in 1843. Bokay speaks of this work as a source book of Pediatrics and a guide for many generations of physicians.

Ernest Bouchut (1819-1891) published a treatise on Pediatrics and he was the first to intubate the larynx with a long tube.

Austria was the next important scene of the revival of medical learning, which occurred under the leadership of Rokitansky. Skoda was his faithful student and interpreted the pathological teachings of his master at the bedside and became a renowned clinician.

During this period clinical medicine was being subdivided into many specialties and in 1858 the St. Anee' Kinder Spital, the third of its kind in the world, was founded under the influence of Ludwig Mauthner. Franz Mayer was his successor and developed into a foremost pediatric teacher and clinician.

Fedor Aloys Bednar published his treatise on the diseases of the new-born in 1856. He may be compared to Billard as a pioneer who made original clinical descriptions and conducted pathologic studies on the material from the infant asylum at Vienna. Jacobi is quoted as saying that Bednar was one of the most scientific pediatrists of Europe during his pertod.

Hermon Wiederhofer graduated in medicine in 1839. He was Franz Mayer's successor. For forty years he continued as teacher, writer and clincian. In the Gerhardt Handbuch he wrote on intussusception and in collaboration with Hans Kundrat he contributed a section in these volumes on the gastrointestinal diseases of infants. He classified and described them on a pathological basis, and while many modifications have been made since his original contribution, his descriptions remain classical and are of value even to this day. Time will not permit us to mention all of the distinguished German pediatricians, though the name of one stands out so prominently and his influence is so large on the development of pediatrics that he deserves special mention. I refer to *Edward Henoch,* (1820-1910). He was trained in physiology and in Virchow's School of Pathology. To Traube he was indebted for his introduction to the study of experimental pathology. After a considerable time spent in foreign study, especially in France, during which period he devoted himself largely to neurological subjects, he returned to Berlin and in 1860 he established in his private dwelling a clinic for the diseases of children. He was the first to study and teach the diseases of childhood in a modern way in the Germanic countries. He published his "Beitrage zur Kinderheilkunde" and translated into German, Charles West's book on Diseases of Children. In 1872 he was given charge of the Policlinic at the Charite and became professor of Diseases of Children in which capacity he continued until 1893. Henoch was the pioneer and founder of modern pediatrics in Germany, but his influence extended far beyond geographical boundaries. Students came to him from all quarters of the globe and he acquired a fame international in character. His activities continued until 1895.

Otto Heubner succeeded Henoch. He entered the pediatric practice after having been trained as an internist and pathologist.

At about this period Rokitansky, at the head of the Pathological School of Austria, had stimulated clinical inquiries in internal medicine as well as in pediatrics.

In the *British Isles* Newsholme says not much attention was paid to the medical care of infants prior to the 18th century. Even in the well-to-do household with large families, the number surviving beyond childhood was relatively small. A story is told of Edward Gibbon, historian, who was one of seven children. Several successive sons were named Edward in order that the father's name might be preserved. Little Edward was the only one to survive and he was so delicate as a child that his life was often dispaired of. This instance is cited to show the high infant and child mortality of this period and the complacency of parents in accepting these tragic deaths. As early as 1747 *Dr. William Cadogan* published an essay on Nursing intended for use in the Foundling Hospital. He advised fresh air, exercise and four hourly intervals of feeding.

In 1769 *Dr. George Armstrong* organized the first Dispensary for Sick Infants in London. Michael Underwood published a treatise on Diseases of Children in 1782. In this publication he thought that the tendency to exaggerate dentition as a disease of infants was unfounded and the prevailing opinion that one child in ten died from dentitio difficulties was untrue. At about this period, in 1809, John Cheyne, who has already been referred to, published three volumes on the diseases of children including an article on Croup. He located in Dublin in 1811, and was physician to Meath Hospital, from which institution he published an essay on Acute Hydrocephalus.

Pediatrics is one of the youngest of the special branches of medicine. At the close of the 18th century and at the beginning of the 19th the new-born and young infants, when treated at all came under the management of the internist and obstetrician. With increasing knowledge of pathology and the fundamental sciences and with a more definite tendency towards specialization, increasing attention was paid to the diseases peculiar to young life. Before the middle of the 19th Century, Children's Hospitals had hardly been organized and Children's Specialists were practically unknown except in a few isolated instances, where they acted as teachers and sepcialized to a limited extent. In 1868 at one of the general meetings of the German National Medical Society a separate section for the study of diseases of children was founded. The leader of this section was Dr. Steffen of Stettin. He encountered considerable opposition. The internists were reluctant to relinquish the pediatric material and opposed the establishment of separate pediatric clinics in the universities, because they wished to retain this material for clinical teaching, and possibly for unstated personal reasons. But from this time on the study and practice of pediatrics gradually took on new momentum. The study of anatomy and of physiology, and special pathology of childhood received a new impetus. With the advent of bacteriologic studies the gastrointestinal disturbances of childhood were subjected to to the closest scrutiny. Escherich of Austria, Lesage of France, Booker and Major Sternberg in American, investigated most assiduously the role of bacteria in the production of these diseases.

Much valuable information was derived from these contributions, although these were mostly of a negative character. It is true that the organisms of typhoid and dysentery and the pyogenic bacteria may produce specific gastrointestinal infections. The vast number of cases of infantile diarrhea have not been proved to be infectious in character, but later researches have shown them to be due to injuries produced by food. I am not unmindful of the fact that during certain seasons of the year and in certain localities, infectious diarrheas may cause widespread disaster with a high mortality among infants. For the modern contributions to our knowledge of the nutritional disturbances we are indebted to Czerny and Finkelstein of Germany.

In the *United States* pediatrics developed concomitantly with advances in European countries. *Benjamin Rush*, the most celebrated American physician of his period, as well as patriot and statesman and signer of the Declaration of Independence, published in 1773 a description of the symptoms of cholera infantum and a discussion of its treatment. He thought that the disease did not appear in Philadelphia until the middle of June and that it generally continued until the middle of September. He observed that its frequency and dangers are in proportion to the heat of the summer. His clinical observations and descriptions were precise and accurate and attracted attention both in this country and abroad. Medical historians record him as one of the first to recognize and describe this fatal disorder of childhood.

The teaching and practice of pediatrics in America was not well founded before the middle of the 19th century. At various periods, desultory efforts were made by American physicians, but there was no American pediatric literature, nor was there an American school of pediatrics up to this time. The writing of Armstrong and Underwood of England and the text-books of Rilliet and Barthez, and Bouchut, were the principle text-books. *John Forsythe Meigs* published a book on Diseases of Children in 1848, which passed through three editions; a fourth was published conjointly with *William Pepper* of the University of Pennsylvania. He classified and systematized the knowledge of infantile pathology and treatment and rationalized the chapter on infant feeding, and furnished a book to the medical profession of American which served as a guide for the practice of pediatrics and an inspiration to those who were interested in diseases of young life.

John Forsythe Meig's father had been a distinguished practitioner and teacher before him and though he specialized in obstetrics he wrote some valuable chapters on pediatrics, and his text-book contained a chapter on the "History and Diseases of the Young Child." This volume was dedicated to the eminent Western physician, philosopher and scholar, Daniel Drake of Cincinnati.

Arthur Vincent Meigs was the son of John Forsythe Meigs. His principle contribution to pediatrics consisted of a volume on "Milk Analysis in Infant Feeding." This little book was an important contribution and fundamental for infant feeding and for the modification of milk.

It fell to the lot of *Abraham Jacobi* to organize pediatric teaching in America. It is said of him that he was the man who put

American pediatrics in a coordinate position with other branches of instruction in medical colleges. He was the Dean of Pediatrics in America. He had been educated by the masters of internal medicine and pathology in Germany and the inspiration which he received there led him to be a life-long student. He read fluently the literature of three languages. He was naturally gifted. He was a keen observer, he had a philosophical mind and a discriminating judgment. These qualities constituted him a foremost diagnostician and a careful therapeutist. His writing and teachings were almost exclusively of a clinical nature, though the social side of medicine did not escape his attention. He waged war against the infant asylum whose mortality rate was nearly 100 per cent. He was insistent on better sanitation; he demanded a purer water and milk supply; he was a great doctor and a militant citizen. He encouraged younger men who were his students and he was a tower of strength to those colleagues who were making efforts to advance scientific medicine. He was a great admirer and protagonist of *Joseph P. O'Dwyer* (1841-1898). Jacobi says of O'Dwyer, "there will be four names placed at the head of those who deserve the places of honor in the conquest of diphtheria: Brettoneau, Trosseau, Behring and O'Dwyer." The discovery of intubation, constituted one of the most important contributions to medical technique, which had come from America up to this time. When the discoverer had finished with his experiment he had so perfected his technique and his instruments that there was little or nothing to be added. The bloodless operation of intubation was eagerly adopted by clinicians in every part of the world, and the diffident, modest O'Dwyer made a contribution to the medical art for which his name should be inscribed in the Hall of Fame.

Infant feeding in America was given a new emphasis by the teachings of *Thomas Morgan Rotch*. Rotch was a thinker and an organizer. He insisted on establishing Pediatric teaching on a higher plane at Harvard University, but his greatest distinction rested upon the fact that he founded milk laboratories for the preparation of feeding formulae, fostered the idea of clean or certified milk and introduced the method of percentage or substitute feeding. This feeding method has not completely survived. Simpler methods are now in vogue. But it should be said to his everlasting credit that he was an impressive teacher and a most ardent student of the infant and child. It may be said of him that he will be ranked among the few pioneers in America who raised pediatrics to the rank of a genuine science and humane practice.

Luther Emmett Holt was a contemporary of Rotch. In his earlier practice he adopted the teachings of Rotch on clean milk and percentage feeding. His text-book on the "Diseases of Infancy and Childhood" was adopted as the standard guide for students and practitioners. He was a prolific writer and investigator, but in addition he was social minded and he accepted leadership in The Infant and Child Welfare Movement of America. In his last presidential address before the American Pediatric Society, in enumerating the advances in Pediatrics in twenty-five years, he noted that a quarter of a century ago not a half dozen men practiced pediatrics exclusively as a specialty in America. Not a medical school had a separate department of Pediatrics. Infant Welfare Stations had not been dreamed of. There were no public health nurses, no special departments of child hygiene; the application of x-ray to diagnosis had not been developed. Basal metabolism was little more than a name and not understood. Lumbar-puncture as a means of diagnosis was occasionally employed, but not in general use. It is to the laboratory investigators that most of the advances in our science in the last quarter of a century are due.

Consider what has been added to our knowledge of diphtheria, poliomyelitis, cerebro-spinal meningitis, infantile syphilis, rickets, tetany, diabetes, scurvy and other deficiency diseases. During this period the new science of immunology, serology and biological chemistry as applied to medicine have been developed. Better feeding and better hygiene are most important factors in the decline of infant mortality. The enforcement of quarantine and the education of mothers, better nursing and the omission of the indiscriminate use of drugs have had some influence in the reduction of the infantile death rate. He considers that in the future three types of pediatrists will be needed. First, the research man who is likely to be a full-time head of a department in a University Medical School; secondly, the man who applies the best knowledge in the treatment of sick children, and third, the public health pediatrist who will be a popularizer and who will convey to the lay public and the general medical profession the latest and best advances in pediatric knowledge. He must not only be an administrator, but also an educator. Luther Emmett Holt was an important figure in the development of American pediatrics; like his most eminent predecessors he was trained in pathology and continued as a progressive leader throughout his life.

The specialty of pediatrics has arrived at a recognized position. There still may be those who think that it is not a specialty or that it is an unnecessary appendage in the division of medical practice. But the factor remains that child health has improved, infant mortality has been diminished in civilized countries and important data have been accumulated concerning the anatomy, physiology, pathology, immunology, prophylaxis and treatment of childhood disorders.

It is only necessary to enumerate some of the advances which have been made in recent years. Children's Hospitals and Dispensaries have been established in all civilized communities. Clinical and research investigators are publishing their results in special journals in all important languages. School hygiene and health education in schools have made it possible to correct visual and postural defects and have assisted in preventing the dissemination of contagious diseases from the school house. Mental tests have been introduced and the psychic status and development have been studied, and much knowledge has been accumulated concerning the correction of faults in child behavior. While breast milk is recognized as most suitable for young infants, nevertheless the increase of our knowledge concerning the chemical nature of the constituents of cow's milk and the requirements of the infant for elemental food substances has permitted a simpler and more rational basis for artificial infant feeding.

The progress of pediatrics in more recent times has been directed principally along the line of prevention. We need only mention the success attained in the prevention of goitre and cretinism, and prophylaxis of diseases resulting from an excess as well as deficiency of food substances. The importance of hormones and vitamins in themaintenance of health as well as in the pervention of rickets by proper food, sunlight, cod liver oil and activated ergosterol and also the discovery that scurvy, beriberi and xerophthalmia could be prevented by the administration of certain accessory food substances indicates a substantial progress. Advances have been made in prevention of diphtheria, tuberculosis, malaria, the louse-born diseases and hook-worm infestation.

The greatest practical achievement in indicated by the decrease in infant mortality. Considering the statistics of the City of New York we find in 1896-1897 that the death rate for children under five years was 14 per cent, while in 1921-22 the death rate was 9.6 per cent. A similar reduction in infant mortality has occurred throughout the civilized world. The most striking fact is that during this period the deaths from diarrheal diseases have declined from 7,224 to 1,942 per annum. A consideration of this information, if for no other reason than from the standpoint of practical results, would justify the existence of pediatrics as a specality. It is not my thought to overglorify the pediatrician or his specialty or to point exultingly to the progress of the past five or six decades. I am not unmindful of the fact that the advance in our knowledge of the diseases of childhood has been apace with the advance in general medicine and the fundamental sciences.

Pediatrics developed at first under the influence of pathology. When the conceptions of diseased tissue made rational diagnosis possible, the knowledge of children's diseases rested on a firm foundation. The advances in the fundamental sciences which have contributed to general medical progress have also permitted advance in pediatric knowledge. It may be said, however, that pediatrician‘s themselves in the last decade or two have been active contributors in advancing the knowledge of disturbances of metabolism, processes of growth and development, infant hygiene and infectious diseases.

This is a brief sketch of the achievements of the past. I regret that the limitations of time and space have not permitted the mention of all of the distinguished names associated with the development of pediatrics. There are many men in all civilized lands who have made valuable contributions and who have devoted their energies to the advancement of pediatric knowledge. All honor is due to those distinguished personalities who have so effectively applied the basic facts of medical science to the relief and prevention of diseases of children.

REDUCTION OF FRACTURES UNDER LOCAL ANAESTHESIA*

Dr. Wm. Sailer Anderson, Memphis, Tenn.

IF you have an x-ray equipment in your office, it is possible for you to reduce quite a number of your fractures and dislocations under a local or conductive anesthetic.

In the upper extremities infiltration block or brachial conduction are quite satisfactory, and after reduction the patient can often become ambulatory in a short time. The anesthetic endures long enough to allow the operator sufficient time, not only for the reduction, but also the taking of x-ray films and the application of splints or cast. An office so equipped compares very favorable with a well appointed hospital, for this type of work, whereas this is not so if a general anesthetic is used. The physician handling a large number of industrial cases will find it well worth his while to equip his office for this type of procedure.

The technic in the office differs in no wise from that used in the hospital, for it is very essential that the same essentials be given to all the details of proper asepsis. All border line and compound cases should best be referred to the hospital. Regardless of the merits of local or general anesthesis in the hospital, the local posseses many advantages over the general in the office work. The general practitioner, who may not have hospital facilities in his neighborhood and who is versed in the use of local anesthesia, may increase his field of activities and reduce many fractures and dislocations that he would otherwise not be able to handle.

Its advantage as an office procedure is both economic as well as psychic. The sale of novocain is rapidly increasing in amount, and this largely verifies the fact that local and conductive as well as spinal anesthesia is becoming more and more of use each day. For some reason unknown conductive and local anesthesia has been considered as a highly specialized art, too dangerous and technical to be of practical service to the untrained. This condition may have arisen from the fact that there was fear when local was first used to use a sufficient quantity to produce the proper effect. We now know that we can use large quantities with practically no ill effects.

When we are consulted, we place ourselves under obligation to our patient by reason of the confidence he bestows in us. By reason of this fact we must resort to every known and best means to protect his life. We should make ourselves worthy of this confidence. Do we do so when we deliberately give them ether and render them liable to the after-possibilities? Are we following the principles of "do unto others as you would have them do unto you" when we administer ether, or I might say any inhalation anesthetic, to a cardiac, alcoholic, asthmatic, nephritic, diabetic, aterioscleratic or an obese, when safer methods are available? Should we compel our patients to stand the added financial burden of the general anaesthetic and remain in bed in the hospital thereafter for some time? We, as a profession, should familiarize ourselves in the uses of a local and conductive anaesthetic.

---

*Read before the Railway Section at the Centennial Meeting of the Tennessee State Medical Association, April 8, 9, 10, 1930, Nashville.

The technique of administration has been modernized and so simplified by various workers as Farr, Pitkin, Allen and others that the dangers are minimum. When a patient is knocked down, or otherwise injured, following a heavy meal you can proceed because you can work wth a full, as well on an empty stomach. There are no post-operative disturbances of the stomach with the resulting nausea and vomiting. There is no increase of shock.

To have the most gratifying results from this type of anaesthesia we must first gain our patient's confidence, and let him know that you promise not to give him pain, and keep your promise as best you can. A patient who has unfortunately been subjected to painful manipulations, probably without any anaesthetic, will be quite apprehensive to any and all subsequent procedures for confidence once lost is hard to gain.

This anaesthetic can be administered by the surgeon himself, a very great assistance at times in emergency cases. Likewise, it permits of the cooperation of the patient, a marked advantage, when working without assistance. There is no paralysis of the anaesthetized field, so the patient may move and change his position under the x-ray, and so help the physician.

Convalsecence from the anesthesia is short, and many patients may be allowed to go home in a short time.

Conductive anaesthesia blocks off the afferent nerves, so painful impulses are not felt and transmitted, therefore, there is no shock. The relaxation is greater than with any other anaesthetic except probably with deep ether narcosis. The duration can be regulated by the amount of the vaso-constrictor used. Regular diet can be shortly given.

A knowledge of the anatomical parts, bony landmarks, and nerves is essential. Strict surgical technic is of much importance. Never insert the needle into the tissues unless it is attached to the syringe, advancing the solution before the needle. Proper syringes and needles are essential. A 22 gauge needle is amply large. Large needles traumatize the tissues. The bevel of the needle should be short to prevent its breaking or bending if a bone is struck. All needles should be tested as to strength and flexibility before and after boiling. The anesthetic is a 1 per cent novocaine solution, to which can be added adrenaline or ephdrine as the indications may arise. The solution must be sterile and clear.

The methods mentioned in this paper have been used with a good degree of success, and I would especially recommend this type of anaesthesia in fractures of the upper and lower extremities except the thigh. This short paper has advocated a number of do's and don't which I hope may be helpful to some of you doing industrial or railroad surgery.

To summarize:

1. It can be used in cases where ether is contra-indicated.
2. It can be used after a heavy meal as there are no post-operative disturbances of the stomach.
3. It does not increase shock.
4. It permits co-operation of the patient.
5. X-rays can be taken in various positions.
6. The relaxation is ample.
7. It is cheaper.
8. Convalescence is short. The patient may plan to go home in a short time.

THE CAUSES OF NON-UNION FOLLOWING FRACTURE OF BONES*

By E. DUNBAR NEWELL, M.D., Chattanooga, Tennessee

IN 1863, Hamilton estimated the incidence of nonunion of fractures to be one in 500 cases. Scudder and Hey-Groves, in 1927, placed it, respectively, at from two to three and from three to five per cent. In a review of our fracture cases from January 1st, 1920, to January 1st, 1930, we find that we have treated 3,973 fractures. During this period we have had four non-union cases—one nonunion to each 1,000 fractures. There was one nonunion of the radius; this was in a healthy, white man, aged 39, who had his right hand, forearm and arm caught in a belt. The injury consisted of a transverse fracture of the right humerus in the middle third and an oblique fracture of the right ulna and radius two and a half and three and a half inches, respectively, from the wrist joint. The humerus and ulna united promptly. Four months after the fracture, roentgenograms of the radius showed much callus formation but there was nonunion. The most probable cause of nonunion in this case was insufficient immobilization and immobilization not continued over a sufficient period of time, and too much inspection and manipulation to determine if union was firm.

The second case was a transverse fracture of the humerus in a robust, normal, white male. Here, too, callus was abundant. Nonunion was attributed to insufficient immobilization as the patient would get drunk and fall on the broken arm that was encased in a plaster cast.

The third case was a supra-condylar fracture of the humerus with a longitudinal fracture down the middle of the distal end into the elbow joint, with separation of the halves for one inch, in a healthy, robust, normal, white male. An open operation was done and fragments wired. In spite of immobilization in plaster splint and confinement to bed for seven weeks, very little callus was seen at any time, and after six months there was nonunion, although the wound was perfectly dry throughout. The cause of this nonunion, I do not know, unless it was the great trauma that caused the accident and the additional trauma inflicted by the rather difficult open operation. After nonunion was definitely determined, bone graft was placed and boney union resulted promptly.

The fourth case was an intracapsular fracture of the neck of the femur in a healthy, normal, white female, age 49. No callus was seen at any time. The fracture was immediately diagnosed, she was kept in bed for two months with limb widely abducted, and there was most distinct nonunion. I consider insufficient blood supply to the fractured ends as the cause of nonunion in this case.

As our cases of nonunion are so few, we can best determine the causes of nonunion not by an analysis of our nonunion cases but by a study of our 3,969 fractures that united promptly and firmly.

I have never considered that systemic conditions, except most remotely and most rarely, are in any way responsible for nonunion. We give our fracture cases normal, well-balanced foods, the usual customary sunshine and fresh air, and no medication for the fracture per se. All of our fractures are treated as emergency cases. They are treated promptly and always by the men who are especially trained to do this work, and under our personal care or personal supervision. Fractures are diagnosed by radiograms and not by manipulation. No manipulation is done except to set the fracture. It is our idea to do as little manipulation as is possibly consistent with accurate approximation, or with an approximation and alignment that will give good functional and cosmetic results. Continued manipulation at different periods in an effort to secure radiograms for records that show 90 to 100 per cent approximation and alignment is certainly a cause for delayed union if not nonunion.

---

*Read before the Tennessee State Medical Association, Centennial Meeting, Nashville, April 8, 9, 10, 1930.

Early easy approximation with complete immobilization until there is a firm bony union is the ideal and usually means quick bony union.

After complete immobilization, redressings at short intervals with rough manipulation to determine the stage of union or nonunion before union is firm will undoubtedly cause delayed union, and if persistent, will cause nonunion. An ignorant, or careless, or obstinate patient will cause the same disaster by not obeying orders in regard to the use of a broken bone.

If interposition of muscle or fascia is the principal cause of nonunion, as is given by so many prominent bone surgeons, it seems strange witn 3,973 fractures that we treated no muscle or fascia became interposed to cause nonunion. Instead of being the principal cause of nonunion, as is affirmed by Henderson, Cotton, and others, I believe that it is rarely the cause of nonunion.

It has been our experience that comminuted fractures heal more quickly than do simple fractures. A comminuted fracture of a long bone due to gun shot wound, if there is no infection, unites before the normal healing time.

We have had no instance of nonunion in a compound fracture either without infection or with infection, and we treat many compound fractures.

A clean transverse fracture of the tibia with perfect approximation and good continued immobilization unites far more slowly than does an irregular transverse fracture, or an oblique fracture. The cause for this I do not know. Henderson and Campbell think that a crushing, devitalizing fracture is a principal cause for nonunion. We have had many such fractures, and although we are always extremely solicitous for fear we will have nonunion, so far no nonunion has occurred in one of these cases.

An open reduction, however delicately done, and with so little trauma that no ligature would be used and no material used to hold the fragments together, has seemed to us to apparently delay union.

Many years ago Murphy contended that a little motion of the fractured ends was necessary for normal firm union. Our endeavor has been for complete, continued immobilization. In delayed union of tibia weight bearing is encouraged, but the bones are supported by casts, braces and Calipers splints.

Cotton, of Boston, places first in the causes of nonunion, something between the bones; second, imperfect setting; third, and mostly, imperfect fixation. Old age, systemic disease, are excuses rather than causes in practice. I agree with him heartily and completely except for something between the bones.

Henry A. Petersen, M.D., of Johns Hopkins University, in a paper read before the annual meeting of the American Orthopedic Association, May, 1924, comes to the following conclusions:

"1. In many cases of ununited fractures, there is an underlying basis, a constitutional disturbance, responsible for the condition, demonstrable as a deficiency in the inorganic bone-forming elements of the blood.

"2. This deficiency shows itself as either a low phosphorus or a low calcium, in most instances the former. In those patients presenting a low phosphorus there is usually an abundant callus, but no calcification; whereas those patients with a low calcium usually show little or no callus.

"3. No healing of the fracture takes place when the inorganic constituents, calcium and phosphorus, are so reduced that the product of these elements is less than thirty; little healing takes place between thirty and thirty-five; active healing results with a product between thirty-five and forty.

"4. Patients with ununited fractures in whom there is a deficiency of one of the other of these elements will, when the deficiency is compensated, go on to healing."

Henderson in a recent paper on the causes of delayed union says: "Usually delayed union is seen in rugged, healthy men in the active period of life." "Most certanly there was no evidence in the cases of delayed union and nonunion that were examined that the calcium content and phosphorus content of the blood were below normal. Therefore, I believe I may dismiss from the discussion any further consideration of systemic causes."

Ravidin and Jonas of the University Hospital of Philadelphia, in a paper read before the Philadelphia Academy of Surgery, March 1st, 1926, on "Studies of Calcium and Phosphorus Metabolism in the Fracture of Bones", makes the following summary:

"1. We have attempted to evaluate the part played by calcium and phosphorus in normal and abnormal ossification.

"2. We have attempted to show that the absorption, excretion and utilization of calcium and phosphorus are not simple problems, but are highly technical.

"3. The mere addition of these substances to the normal diet is probably useless.

"4. In certain cases of delayed or nonunion deficient retention of fixation of calcium and phosphorus may result in nonunion, but this cannot be recognized from blood serum estimations."

Wilton H. Robinson, M.D., of Pittsburgh, in a paper on "The Role of the Circulation in the Healing of Fractures", printed in the Archives of Surgery September, 1928, says:

"Throughout all processes of bone repair, the circulation is of primal importance, and by this is meant, not only the arterial circulation, but that of the veins and lymphatics, for without the elimination of the waste products, repair will be impossible.

"If resistance to expansion (swelling) occurs, its effect will be to diminish or occlude the lumen of the arterial blood vessels and thus prevent an adequate supply of blood from reaching the interior of the callus. I believe that, regardless of the exact manner in which mineral salts are laid down, they are carried by the arterial system to the region in process of repair. If this belief is correct, interference with an adequate supply of blood must have a deleterious effect. Hence the great importance of an effort to prevent considerable hemorrhage and inflammatory reaction even during the early days of a fracture is evident, or if this should occur, the immediate provision for the additional expansion by a readjustment of any circumferential dressing whether it is a bandage, cast or adhesive plaster.

"With a proper clot and no interruption to its vascularization and the laying down of mineral salts, bone healing will be carried out. When interruption of the continuity of the vessel system takes place, however, the normal bone repair will be interrupted or fail completely, and the characteristic fibrous union will occur. The horizontal series of new arterial vessels may have its continuity interrupted by cutting from the shearing action of the two fragments if moved and in practice this is done by too frequent or not sufficiently gentle, firm handling in dressing, or it may occur from lack of proper support by the splint, the adjustment of which may permit hinge-like motion between the fragments. I cannot see any reason for the belief held by some that a little motion is good for a fracture."

This is in complete accord with our clinical experience—early, accurate, approximate and complete continuous immobilization to prevent interference with the circulation to and from the site of the fracture.

Astley P. C. Ashhurst, M.D., of Philadelphia, Pa., in a paper, "Is Accurate Reduction of a Fracture Necessary?" that appeared in the Ransactions of the American Surgical Association, May, 1929, says: "Delayed, and especially oft repeated, attempts at reduction not only do great injury to the soft parts, but are quite apt to hinder the progress of union, with the result of delayed union, or even nonunion. Water which is constantly agitated will not easily freeze."

Frederic W. Bancroft, M.D., of New York, in a paper read before the Transactions of the American Surgical Association, May, 1929, says: "The most important factor for the union of fracture is to have the fractured ends in close apposition and to allow the ingrowth of granulation tissue with the resultant ossification to form callus. It appears, therefore, that the clinical handling of a fracture should be centered more upon the local and immediate treatment of the injured limb than upon the general metabolism of the individual. In rickets, which is perhaps one of the most noticeable metabolic diseases of bone, nonunion after fracture is a relative rarity."

Kellogg Speed, M.D., of Chicago, Ill., in a paper before the same Association, says: "In a study of the prevention of nonunion it seems logical that repeated or numerous attempts at reduction of a fracture interfere with this process of bone union. The tissue destruction and vascular disturbance following repeated rough movements probably lead to the formation of products which change the local chemical reaction in the tissues and interfere with the normal deposition of calcium salts. Likewise the vascular outgrowth is disrupted, disheartened and ended—the fibrous tissue cicatrizes and there is no chance for the laying down of calcium slats in a normal manner. Fibrous union results."

Howard L. Beye, M.D., Iowa City, in an analysis of thirty-six cases of ununited fractures of the tibia treated by him at the University Hospital, concludes: "The general condition of the patient, with very few exceptions, was good. Deformity was striking by its absence. In most of the cases the line of fracture was transverse or slight oblique and in thirty-three the alignment was remarkably good with the fragment ends in contact. In only three, therefore, was the deformity so marked that it could have been a decided factor in nonunion.

"The original treatment of the fracture was clearly inadequate in twelve instances in that immobilization was incomplete. In seven other cases immobilization was discarded too soon—before union could have been adequately established. It is also of significance that five cases were operated upon and metal plate fixation used. In twenty-four of the thirty-six cases, therefore, the treatment was such that conditions were not provided or maintained which were satisfactory for the establishment of union."

Henderson in an analysis of two hundred fifty-nine cases of ununited fracture, says that more than one-half were associated with severe injury. "These severe injuries were of a crushing, twisting, contusing or devitalizing type. In sixty-three, either inadequate reduction with consequent malposition or inadequate fixation seemed to be the cause of the lack of union. In thirty-nine cases, I could find no outstanding causes and was forced to put them down as indeterminate. In eleven cases, pieces of metal in the form of a plate or wire were considered the cause of the failure to unite."

Charles L. Scudder, M.D., of Boston, in a paper on fractures read before the American Surgical Association in May, 1929, says: "Cowan, in a recent study on the healing of fractures, has called attention anew to the necessity for securing firm contact over as broad a fractured surface as possible so as to permit the reparative process to function at a normal maximum. Under these conditions union will almost always occur. Therefore, from the pathological basis of repair, we feel the urge in treatment to secure firm bony contact. Under certain conditions, this may be obtained by operation more precisely than by other methods. The processes of union are facilitated by accurate apposition.

"Clinically, this means that if a fracture is so treated that there will be no constriction or obstruction to its blood supply and that there is sufficient immobilization to allow the growth of granulation tissue without its being constantly broken up and interfered with by the movement of the rough fracture ends of bone, repair will proceed in an orderly manner. The processes of union are facilitated by firm reposition and apposition. Every effort must be made to bring about these conditions."

Conclusion

1. The principal cause of delayed union and nonunion is imperfect approximation, repeated rough manipulation in an effort to get approximation, and insufficient or improper immobilization.

2. Rough manipulation and too frequent inspection and manipulation following the first approximation.

3. Allowing too early resumption of full function and thus discontinuing the immo-

bilization before roentgenograms show abundant callus, or before physical examination reveals firm bony union.

4. Great trauma with devitalizing injury to soft parts and bone, and with marked interference with the blood supply and loss of bone and its periosteal and muscle coverings, with added infection will always be a prime cause of nonunion.

5. No nonunion in a Negro and 18 per cent of these fractures were in Negroes.

BIBLIOGRAPHY

1. Newell, E. Dunbar: Fractures—A Brief Analysis of All the Fractures Treated at the Newell Clinic and Sanitarium During the Years 1920-1924, Inclusive. Read before the Tennessee State Medical Association, Nashville, Tenn., April 21, 22 and 23, 1925.

2. Newell, E. Dunbar: Review of Over Two Thousand Fractures in Past Seven Years. Read in Section on Surgery, Southern Medical Association, Twentieth Annual Meeting, Atlanta, Georgia, November 15-18, 1926.

3. Newell, E. Dunbar: The Open Verses the Closed Method of Treating Fractures. Read before the Tennessee State Medical Association, Nashville, Tenn., April 12th, 1928.

4. Newell, E. Dunbar: Fractures. Read before the Thirteen Counties Medical Association, Baldwyn, Miss., Sept. 17-18, 1929.

5. Petersen, Henry A.: A Clinical Study of Ununited Fractures With Special Reference to the Inorganic Bone-Forming Elements in the Blood Serum. Read at the Annual Meeting of the American Orthopedic Association, May, 1924.

6. Henderson, Melvin S.: Ununited Fractures With Special Reference to the Chemistry of the Blood. Journal of Bone and Joint Surgery, Vol. viii, No. 2, pp. 607-617, July 1926.

7. Henderson, Melvin S.: Nonunion of Fractures of the Hip. Surgical Journal, May-June, 1927.

8. Robinson, Wilton H.: The Role of the Circulation in the Healing of Fractures. Archives of Surgery, September, 1928, Vol. 17, pp. 420-429.

9. Campbell, Willis C.: Ununited Fractures. Archives of Surgery, May, 1924, Vol. 8, pp. 782-790.

10. Ravidin, Isidor S., and Jonas, Leon: Studies of Calcium and Phosphorus Metabolism in the Fracture of Bones. Annals of Surgery, July, 1926.

11. Henderson, Melvin S.: Causes of Delayed Union of Bones. Minnesota Medicine, September, 1929, Vol. xii, page 529.

12. Cotton, Frederic J.: Nonunion in Shaft Fractures: The Treatment. Boston Medical and Surgical Journal, November, 1923, Vol. 189, No. 22, pp. 845.

13. Hunter, C. D.: Nonunited Fractures. Read before Pacific Northwest Medical Association, Spokane, Wash., June, 1926.

14. Henderson, Melvin S.: Ununited Fractures. Journal of American Medical Association, January 9, 1926, Vol. 86, pp. 81-85.

15. Henderson, Melvin S.: Nonunion in Fractures: The Massive Bone Graft. Journal of American Medical Association, August 11, 1923, Vol. 81, No. 6, pp. 463.

16. Henderson, Melvin S.: The Cause and Treatment of Ununited Fractures. Journal of Southern Medical Association, October, 1926, Vol. xix, No. 10, pages 746-750.

17. Hitzrot, James Morley: The Cause and the Treatment of Nonunion. American Journal of Surgery, July 1926, New Series Vol. 1, No. 1, page 51.

18. Ross, Dudley E.: Relation of the Parathyroids to the Healing of a Fracture as Controlled by the Roentgen Rays. Archives of Surgery, April, 1928, Vol. 16, pp. 922-937.

19. Mock, Harry E.: Periosteal Transplants in the Repair of Delayed Union, Ununited Fractures, and Loss of Bone Substance. Surgery, Gynecology and Obstetrics, May, 1928, pages 641-657.

20. Ely, Leonard W.: Experimental Study of the Healing of Fractures. From the laboratory of surgical pathology, Stanford University.

21. Cox, Henry M.: Certain Factors Causing Delayed or Nonunion of Fractures. Read before the Tennessee State Medical Association, Jackson, April 9th, 1929.

22. Henderson, M. S.: Fractures Considered as Potential Deformities. President's address before the Southern Minnesota Medical Association, Mankato, January 20-21, 1919.

23. Cotton, Frederic J.: Nonunion of Fractures of the Long Bones. The New England Journal of Medicine, November, 1929, Vol. 201, No. 20, pp. 982-895.

24. Bancroft, Frederic W.: Process of Union After Fracture. Transactions of the American Surgical Association, May, 1929.

25. Ashhurst, Astley P. C.: Is Accurate Reduction of a Fracture Necessary? Transactions of the American Surgical Association, May, 1929.

26. Speed, Kellogg: Nonunion After Fracture. Transactions of American Surgical Association, May, 1929.

27. Estes, Jr., William L.: The Immediate Treatment of Open Fractures. Transactions of the American Surgical Association, May, 1929.

28. Scudder, Charles L.: The Treatment of Recent Fractures of the Long Bones by Operation. Transactions of the American Surgical Association, May, 1929.

29. Beye, H. L.: Ununited Fractures of the Tibia; Etiology and Treatment. Journal Iowa Medical Society, Des Moines, 1929, xix, 191-2.

30. Campbell, Willis C.: Fractures of the Shaft of the Femur. Surgery, Gynecology and Obstetrics, Chicago, November, 1924, 642-652.

31. Campbell, Willis C.: Ununited Fractures. Archives Surgery, Chicago, 1924, viii, 782-790.

32. Carter, Ralph M.: The Estimation of Permanent Functional Disability Following Fractures. Surgery, Gynecology and Obstetrics, Chicago, February, 1928, 273-280.

33. Cowan, J. F.: Nonunion of Fractures: An Experimental and Clinical Study. Annals Surgery, Philadelphia, 1928, lxxxviii, 749-771.

34. Estes, William Laurence, Jr.: A Study of the Causes of Delayed Union and Nonunion in Fractures of the Long Bones. Annals Surgery, Philadelphia, January, 1920, 41.

35. Henderson, Melvin S.: Old Fractures. Journal-Lancet, Minneapolis, 1920, xl, No. 24.

36. Hoover, R. M.: Ununited Fractures. Virginia M. Month., Richmond, 1929, lvi, 185-186.

37. Hunter, C. D.: Nonunited Fractures. Northwest Medical Seattle, 1927, xxvi, 361-363.

38. Kidner, F. C., and Lakoff, Charles B.: Muscle Interposition, a Cause of Delayed Union in Fracture of the Femur. Journal American Medical Association, Chicago, 1922, lxxix, 200-203.

39. Kolodny, Anatole: Endocrine Disturbances and Nonunion of Fractures; Experimental Study. Surgery, Gynecology and Obstetrics, Chicago, June, 1924, 793-797.

40. Moorhead, John J.: The Management of Fractures of the Femur. Surgery, Gynecology and Obstetrics, Chicago, 1920, xxxi, 288-297.

41. Nutter, J. Appleton: On Delayed Union and Nonunion of Fractures. Journal Bone and Joint Surgery, Baltimore, 1922, iv, 104-128.

42. Taylor, R. Tunstall: Newer Methods of Treatment in Nonunion of Fractures. Surgery, Gynecology and Obstetrics, Chicago, June, 1925, 862-867.

43. Trout, Hugh H.: Operative Treatment of Recent Fractures and Nonunion. Archives Surgery, Chicago, 1924, ix, 275-283.

44. Weinstein, Mandel: Fractures of the Humerus; a Study of Fifty-three Cases. American Journal Surgery, New York, 1926, i, 80-86.

45. Willard, De F. P.: Treatment of Nonunion in Compound Fractures. Annals Surgery, Philadelphia, 1920, lxxi, 182.

DISCUSSION

DR. DUNCAN EVE, JR. (Nashville): I certainly enjoyed Dr. Newell's paper and congratulate him first on his brilliant results. I must say that we do not quite get the results in Nashville that they do in Chattanooga.

The causes of nonunion may be grouped under three heads: first, mechanical; second, inflammatory; and, third, disease. Under mechanical head we have over-lapping, frequent manipulation, gap fractures, excessive traction, interposition of soft parts, mobility and lack of blood supply.

Under the inflammatory head we have sepsis, necrosis and atrophy.

Under disease we have Firbocystic disease; new growths and syphilis.

I must say that I do not agree with the Doctor in regard to syphilis. I believe syphilis has a marked influence on bone repair.

A great deal may be done for the formation of callus by mechanical and chemical stimulation. Mechanical stimulation consists of pressing the bones together, especially in cases of leg bones, walking causing apposition of the fragments, and the fibrous tissue is compressed.

The methods to prevent nonunion: first, is the fracture reduced and if we have contact; second, careful x-rays; third, good alignment; fourth, is the circulation normal.

The treatment of fractures is a big subject. Stop and think that in 1928 in this country the railroad accidents, industrial injuries and all types of accidents cost this country $41,000,000 and $20,000,000 of this was for fractures. In the treatment of fractures, we might say the chief risk is delay—by waiting, we not only treat the fracture but also the complication.

DR. R. R. BROWN (Nashville): Mr. President and Gentlemen: I enjoyed very much Dr. Newell's paper. A paper quoting such brilliant results makes you wonder why Dr. Newell should be interested in nonunion. His results are much better than is ordinarily quoted.

I, like Dr. Newell, feel that in considering the causes of non-union, the local causes or those problems referrable to proper approximation of the fragments, have more to do with nonunion than do the systemic causes. However, I do feel that the systemic causes are present in cases and must be dealt with. It is fairly uniform that men familiar with bone work are running into cases of nonunion in which through the study of the individual they find some definite cause in that individual's general health that affects the nonunion.

The most important single factor, I think, in getting union of fractures is a re-establishment of the blood supply. Dr. Newell referred to this, and I am sure that there is no one factor in the handling of fractures that will determine a good union as much as a sure approximation and immobilization in that the blood vessels can re-establish themselves and a proper blood supply be furnished.

In contradiction to the element of stasis causing nonunion, Drs. Pierce and Morton of Rochester, New York, in a recent article in "Bone and Joint Surgery", have done some definite investigation to show that venous stasis, or a passive hyperemia in the neighborhood of the fracture, will hasten rather than retard a bony union. They follow this up with definite x-rays in which they use controls, and the x-rays certainly are very interesting and show a marked favorable difference in the amount of callus thrown out in passive hyperemic cases over controls in the same length of time.

One particular type of fracture that they refer to that I have run into that is troublesome, and I am sure the Orthopaedic men here have seen it, is a fractured metatarsal bone, especially of the fifth, where due time of immobilization and rest still does not give a bony union. Oftentimes these people have a painful foot over a long period of time and x-rays made several months following the injury do not show this bone united.

Dr. Morton recommends especially the venous stasis for this particular type of fracture, and quotes two very definite cases, and I think it must have some bearing on his cases and certainly appeals to one enough to warrant its trial.

It is gotten by using a blood pressure apparatus around the extremity and having pressure a few points above the diastolic pressure maintained most of the time, adjusted so there is not an edema in which there is pitting, but a definite injection of the extremity, and after a period of two or three weeks, Dr. Morton's two cases treated this way showed a definite bony union.

CLOSING DISCUSSION

DR. DUNBAR NEWELL (Chattanooga): I just want to show the slides of the four cases of non-union. In our fracture work we are afraid of lawsuits so we keep a record of them. All our cases are private cases. The minute a fracture comes in a record is made of the case and an x-ray is taken and filed away. Subsequent x-rays are taken and filed away, so we have a complete and accurate record of every single case of fracture we have ever treated.

We will show you the slides of these four cases of non-union and you will understand why we have come to our conclusions about non-union in these particular cases.

Answering Dr. Eves about syphilis influencing non-union, I wish to say that eighteen per cent of our cases are negroes; in other words, eighteen per cent of 4,000, that is about 750 of these cases, were Negroes. Not one single delayed union or non-union occurred in any one of those Negroes, and I am quite sure that twenty to fifty per cent of those Negroes would have shown a plus Wassermann. We rarely take a Wassermann on a Negro in our section that doesn't show a positive. When you consider that there were between 750 and 800 of those cases in Negroes, and not one single delayed or nonunion in any one of them, I think that answers the question from a clinical standpoint quite well.

(Slide) This is the first case of the nonunion of the radius. He also had a fracture of the ulna. The fracture of the humerus is not shown. That is taken at the beginning.

(Slide) You can see the abundant callus here. I feel quite sure the reason that patient had nonunion was that the patient was a very nervous, restless man, and constantly wanted to have his arm dressed and manipulated. He would come sometimes as often as every four or five days to have it re-dressed, and I think it was manipulation that broke down the circulation of the callus which was the cause of nonunion in that case, because he was a perfectly well, healthy, normal man and the ulna united promptly, as did the humerus, and he had abundant callus, but he had no union.

(Slide) This was a fracture in a perfectly well, healthy, normal man. This was taken before any manipulation.

(Slide) This is a man who was very obstinate, he would get drunk, he would fall down and rebreak this fracture, and the cause of nonunion in this case was unquestionably excessive amount of mobility at the site of the fracture. It was impossible to completely immobilize that fracture. To my mind systemic causes had nothing to do with it. It wasn't anything but mechanical causes. From my own personal experience I think that mechanical causes are practically ninety-nine per cent of the causes of nonunion.

(Slide) You can see what a horrible fracture this is, a supracondylar fracture with the distal end fractured and a wide separation, and a tremendous amount of trauma. Camel and Henderson are both insisting, and probably correctly so, that the amount of trauma has something to do with nonunion. I think it does have quite a good deal to do with it. I think it destroys the circulation. I think it devitalizes the soft tissues and thus interferes with the circulation, and I do think that most probably it is a very vital cause of nonunion. Fortunately, in our particular set of cases it has not been the cause.

(Slide) This was after the operation. The arm was terrifically swollen, and edematous at the time of operation. I was afraid to wait. I did the open operation on this case. It was quite a difficult operation. I thought it had perfect approximation. In one view I have perfect approximation, but in the other there isn't. It should have been sufficient to have gotten good union. Although this was a perfectly well, normal, healthy, robust workman, kept in bed for seven weeks with complete immobilization, there was still no union. He had no infection. The wound was perfectly dry throughout. I think in this case excessive trauma and obstruction of the blood supply was the cause of nonunion.

After seven months a bone graft was placed and he had union at once.

(Slide) This is a type of intracapsular fracture. It was diagnosed at once, put to bed right away, kept in bed for two months, and she was also a perfectly well, healthy, normal woman, except the site of the fracture would indicate, of course, a very poor blood supply. I think in this case the cause of the nonunion was poor blood supply to the parts because no callus was thrown out at any time.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1930

EDITORIAL

WARNING SERVED ON MEDICAL MEN

Under the above heading a short news item appeared in the Nashville Banner of October 22, 1930. The story pertained to utterances by Governor Bibb Graves, of Alabama; Dr. Stewart Roberts, of Atlanta, and Charles Rosen, of the Touro Infirmary, New Orleans, on a program of some sort at New Orleans.

Many rash assumptions are being broadcast to the public with the worst possible effects. One is the assumption that doctors are operating hospitals. Doctors are not operating hospitals except in rare instances, and even though hospitals are operated under the direction of governing boards composed of business men, they are already operated at a loss. There are few hospitals that are operated at a profit. So it is not reasonable to assume that these costs can be materially reduced.

It is most unfortunate that doctors' fees are always thrown into the jumble of costs of being sick. Doctors may be blamed or credited for whatever effect their charges and collections have on the situation and no more. Most all the speakers and writers of recent months make no attempt to clarify these points in the minds of the readers. The lay reader is left with the unfortunate impression that all of the services cost too much and the doctor alone is to blame. This is not only unfortunate—it is unfair both to the doctors and the public. It may lead to rash action which would not only bring regrets but would be difficult to correct.

The attitude of some leaders in business is so inconsistent as to be striking. They seem to favor the principles of socialism as applied to affairs other than their own business. This bit of inconsistency is the biggest danger that lies out in front of us.

Every one recognizes the importance of the relationship between health and good food, good homes, good clothing, good blankets, decent hours of work and recreation, yet the very men who see advantages in medical socialism would be most violently opposed to these other necessities being supplied by socialistic methods.

We will repeat again, business leaders may force socialism into medicine. If it does medicine in turn will socialize the balance. This one type of human service will not be rendered under a socialistic scheme of operations and others remain unsocialized.

MEDICAL ETHICS (*Continued*)

On two previous occasions the subject of medical ethics has been discussed briefly but in a broad way. We now will get down to the discussion of some specific instances.

Rules that apply with reference to emergencies: A doctor in charge of a case may be not available when an emergency arises. It is perfectly ethical for any available doctor to attend such a case *in the emergency.* It is his duty to take care of the emergency only and to report the condition and the treatment to the physician in charge at the earliest possible moment and then retire from the case.

In an emergency several physicians are summoned. The rule is that the first to arrive should be considered the physician in charge, "however, as soon as the exigencies of the case permit, or on arrival of the acknowledged family attendant or the physician the patient desires to serve him, the first physician should withdraw in favor of the chosen attendant; should the patient or his family wish some one other than the physician known to be the family physician to take charge of the case the patient should advise the family physician of his desire. When, because of sudden illness or accident, a patient is taken to a hospital, the patient should be returned to the care of his own family physician as soon as the condition of the patient and the circumstances of the case warrant this transfer."

It is observed that the code of ethics compels physicians to respect the rights of sick people to have the physician of their preference in attendance upon them. The fact that one doctor may have superior ability in taking care of a given case does not alter the fundamentals of the situation. The patient must be privileged to select even the poorer of the two if he so chooses just as he is privileged to buy a gold brick if he chooses to do so with his eyes open. There is no liberty otherwise.

1930 STANDING COMMITTEES

Committee on Scientific Work

H. H. Shoulders, Chairman, Nashville.
R. H. Monger, Knoxville.
A. F. Cooper, Memphis.

Committee on Public Policy and Legislation

Robert Caldwell, Chairman, Nashville.
A. G. Kern, Knoxville.
H. B. Everett, Memphis.
W. D. Haggard, Nashville.
J. B. McElroy, ex-officio, Memphis.
H. H. Shoulders, ex-officio, Nashville.

Committee on Public Health

T. B. Yancey, Chairman, Kingsport.
A. G. Nichol, Nashville.
L. M. Graves, Memphis.
Herman Hawkins, Jackson.
John D. Brewer, Dyersburg.

Committee on Cancer

J. M. Maury, Chairman, Memphis.
E. D. Newell, Chattanooga.
L. E. Burch, Nashville.

Committee on Medical Education

A. B. DeLoach, Chairman, Memphis.
W. H. Witt, Nashville.
J. L. McGehee, Memphis.

Committee on Hospitals

Battle Malone, Chairman, Memphis.
R. B. Wood, Knoxville.
E. H. Baird, Dyersburg.
O. N. Bryan, Nashville.
R. L. Jones, Nashville.
E. E. Ellett, Memphis.
B. L. Jacobs, Chattanooga.

Liaisson Committee on Public Health

J. F. Gallagher, Chairman, Nashville.
G. R. McSwain, Paris.
John B. Steele, Chattanooga.

State Tuberculosis Hospital Commission

J. O. Manier, Chairman, Nashville.
Geo. C. Williamson, Columbia.
Wm. C. Dixon, Nashville.

DEATHS

Dr. W. G. Casenburg, Knoxville; Lincoln Memorial University, Medical Department, Knoxville, 1897; aged 57; died suddenly October 18th.

Dr. C. M. Sebastian, Martin; University of Louisville Medical School, Louisville, Kentucky, 1870; aged 80 years; died September 28th, after an illness of several weeks.

Dr. Frank H. Stiltner, Wind Rock; Lincoln Memorial University, Medical Department, Knoxville, 1909; aged 55; died October 22nd, from injuries suffered in an automobile accident.

NEWS NOTES AND COMMENTS

Dr. Arthur G. Quinn, of Memphis, recently addressed the Four-County Medical Society at Fulton, Kentucky.

Dr. W. C. King, of Johnson City, has moved to Greeneville, and will be associated with Dr. R. O. Huffaker.

Dr. Hiram Laws was elected president of the Chattanooga Surgeons' Club at its last annual meeting. Drs. Earl Campbell and Victor Williams were elected vice-president and secretary-treasurer, respectively.

Dr. J. L. Edwards, of Brownsville, has recently recovered from an illness of several days.

Dr. J. W. Wallace, of Johnson City, spent part of October visiting New York clinics.

The members of the Nashville Academy of Medicine and Davidson County Medical Society were delightfully entertained by the Nashville Surgical Supply Company at a dinner at the Noel Hotel on the evening of November 4th. A delicious menu was served and after dinner an address of welcome was given by Mr. Henry Cooper, of the Nashville Surgical Supply Company, in which he expressed the pleasure of his company at having the opportunity to entertain the doctors who had contributed largely to the rapid growth of the firm since its organization fifteen years ago. Dr. Pollard, the president of the society, called upon Dr. Witt to respond and Dr. Witt, in a few well chosen words, expressed the Academy's appreciation of the Nashville Surgical Supply Company's hospitality and wished them continued prosperity.

The especial guest of the evening was Dr. R. F. Lischer, of Mascoutah, Illinois, who gave an extremely interesting address entitled "A Pen Picture of the Country Doctor". The address was interspersed with numerous stories, both humorous and pathetic, illustrating the human touch in the practice of medicine. Dr. Lischer's address was enthusiastically received and he was given a rising vote of thanks by the Academy.

Mr. Cooper brought the meeting to a close by the distribution of favors to all the guests and twenty-two handsome prizes given to the holders of the lucky numbers.

MEDICAL SOCIETIES

Chattanooga and Hamilton County—The program for the month included the following subjects:

"Cholecystitis," by Dr. H. Quigg Fletcher. "Cholecystitis and Hepatitis", by Dr. E. E. Reisman. Discussion opened by Dr. H. A. Laws.

"The Roentgen Ray in Traumatic Surgery", by Dr. J. Marsh Frere. Discussion opened by Dr. J. A. Beals.

"Physiological Surgery", by Dr. H. L. Fancher. Discussion opened by Dr. A. M. Patterson.

"Empyema", by Dr. W. D. L. Record.

Paper by Dr. C. R. Thomas.

Coffee County—On October 9th the meeting was held at the home of Dr. E. P. Vaughan, the president. A full attendance was present. Dr. C. E. Evans, of Tullahoma, read a paper on the "Artificial Feeding of Babies".

Bedford County—At the meeting on October 16th, Dr. J. L. Morton was the speaker. Dr. V. K. Earthman opened the discussion.

Davidson County—On October 21, Dr. Roger Herbert read a paper on "Reflex Pain With Reference to the Rectum". Dr. D. R. Pickens opened the discussion.

On October 28th, Dr. Emil Novak, of Baltimore, talked on "Menopausal Bleeding".

November 4th, the Academy was entertained at dinner at the Noel Hotel by the Nashville Surgical Supply Company. Dr. R. F. Lischer, of Mascoutah, Illinois, spoke on the "Country Doctor".

November 11th, Dr. T. Fort Bridges spoke on "Premature Infants; A Report of 118 Cases".

Gibson County—At the meeting scheduled for November 24th, Dr. Arthur Cooper, of Memphis, will speak on "Medical Ethics". Dr. John Jackson, of Dyer, will discuss "Home Treatment of Tuberculosis". Dr. G. C. Bryant, of Milam, will discuss "Home Treatment of Diabetes".

Hancock, Claiborne, Union Counties—The regular monthly meeting was held in Dr. M. B. Carr's office at Tazewell. An interesting program was given.

Hardin, Lawrence, Lewis, Perry, Wayne Counties—The regular meeting was held at Linton on October 28th, with the following papers read:

"Mediastinal Tumors" (with lantern slides), by Dr. R. C. Bunch, Nashville. Discussion opened by Dr. Watt Yeiser, Columbia.

"Placenta Praevia", by Dr. Paul Faucett, Columbia. Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

"Consideration of Some of the Common Ailments of Children," by Dr. H. G. Bradley, Nashville. Discussion opened by Dr. Risen DeFord, Savannah.

Knox County—October 14, Dr. Holloway, "Salpingitis". Discussion opened by Dr. Raulston.

October 21st, Dr. R. M. Young, "Whooping Cough". Dr. Joe T. Smith opened discussion.

October 28th, Drs. Oliver Hill and Robert Patterson, "A Discussion of Poliomyelitis". Dr. W. R. Cross opened discussion.

Madison County—On October 7th the meeting was an informal discussion of plans for the winter months. A number of interesting cases were reported and discussed.

Robertson County—Dr. and Mrs. W. L. Gossett, of Adairville, Kentucky, were hosts for the October meeting. After luncheon Dr. S. C. Cowan, of Nashville, spoke on "Rectal Analgesia and Anesthesia in Obstetrics". Dr. H. H. Shoulders, of Nashville, spoke on "Cholecystitis". Both addresses were freely discussed.

OTHER MEDICAL SOCIETIES

The Walnut Log Medical Society held a well attended session October 16-17. One of the unique features of the meeting was a program broadcast over WOBT at Union City.

This year's autumn meeting of the East Tennessee Medical Society met in Cleveland with a good attendance and interesting program. Greeneville was selected as the next meeting place and officers were elected as follows: President, Dr. W. B. Campbell, Cleveland; Vice-Presidents, Drs. T. B. Roberson, Riceville, and L. S. Neese, Newport; Secretary-Treasurer, Dr. Jesse C. Hill, Knoxville.

PROGRAM FOR MEETING OF THE VANDERBILT UNIVERSITY MEDICAL SOCIETY

October 3, 1930, at 8 p. m., Amphitheatre of the Medical School.

(1) Presentation of Cases:

(a) Case of Paget's Disease—Dr. Rucks. This case showed the following not unknown, but extremely unusual features: (1) choked disc; (2) left hemiparesis; (3) unilateral tibial involvement; (4) evidence of sarcomatous changes in the bone. Case discussed by Drs. Hillstrom and Burwell.

(b) Stab Wound of Heart—Dr. Blalock. Patient admitted to the hospital five days previous to this meeting, three hours following a stab wound of his left chest by a pair of scissors. Mediastinotomy performed, wound in apex of left ventricle sutured. Post-operative course thus far uneventful. Case discussed by Drs. Haggard, Youmans and Burwell.

(2) A Contribution to the Cellular Pathology of Experimental Syphilis—Drs. Morgan and Cunningham. A basic feature of the microscopic pathology of acute experimental syphilis is an increase in the size, number and physiologic activity of the mononuclears of the tissues. Tuberculosis produces a physiologic depression of the phagocytic mononuclears. The pathology of the two diseases is, therefore, similar, in that they both involve the phagocytic mononuclears, but differs in the effects produced upon these cells. It seems legitimate to interpret these observations as establishing a new concept of the pathology of syphilis, a concept which is precisely the opposite of that which has been established in tuberculosis by the study of individual cells. Paper discussed by Drs. Tompkins, Meleney and Goodpasture.

(3) The Nature of the Hypoglycemia Following Acute Liver Damage and Its Relief by Calcium—Dr. Minot. The hypoglycemia of acute liver injury seems to a large degree to be secondary to guanidine intoxication. In some way which we do not understand, guanidine causes an accumulation of lactic acid. The processes of glycogenolysis and lactic acid synthesis to liver glycogen are interfered with and a loss of carbohydrate reserves in the form of lactic acid results. Calcium medication seems to re-establish the rebuilding of lactic acid to liver glycogen and normal glycogenolysis—thus preventing much of the carbohydrate loss as lactic acid and maintaining a safe blood sugar level. The calcium relief is not inconsistent with what we know of the emergency adrenalin mechanism. Paper discussed by Dr. Lamson.

BOOK REVIEWS

GONOCOCCAL INFECTION IN THE MALE. Abr. L. Wolbast. C. V. Mosby Co., St. Louis, Mo. Price $5.50.

This is the second edition of a very practical text-book, and is intended primarily for the general practitioner. His conception that gonorrhea should be considered a constitutional rather than a local disease, and can be cured only with the aid of inherent resistance, is sound and worthy of serious consideration. Particular emphasis is laid on diagnosis and treatment rather than lengthy description of the bacteriology and pathology, which is less important to the busy practitioner.

Chapter one deals with the anatomy of the genital tract which is well illustrated. The method of preparing and staining the specimen is briefly outlined. The symptomatology is lucidly described in few words, defining those of acute anterior and posterior symptoms.

Chapter two is devoted to diagnosis and to office equipment necessary in the treatment of this disease and stressing the importance of the three glass test. The outline of treatment is based primarily on gentleness rather than claims of the miraculous action of any drug. To stimulate the natural resistance of the host is the prime object in treatment.

I strongly disagree with the author in medicating an acute posterior urethritis. In the treatment of gonococcal arthritis he recommends vaso-puncture with an injection of an antiseptic. He bases this on the fact that the focus is usually in the vesicles. While this may happen in the chronic cases occasionally, it has been my experience that the great majority of cases developing arthritis, do so in the first three weeks of the disease when the infection is limited to the anterior urethra. These cases usually present fewer local symptoms than any others.

Chapter eight deals with chronic anterior gonorrhea and the use of the uruthroscope. Many beautiful illustrations of the diseased urethra are included.

The chapter on treatment of chronic prostatitis with the author's pneumo-vibration apparatus is unique and worthy of trial.

Chapter thirteen is devoted to diathermy in the treatment of gonorrhea. He considers this method of treatment almost a specific in metastatic infections, especially those of the scrotal contents.

This book is easy to read, practical and concise, and especially valuable to the general practitioner.

TOM R. BARRY, M. D.
F. K. GARVEY, M. D.

MEDICAL RECORD VISITING LIST, OR PHYSICIAN'S DIARY FOR 1931. William Wood & Company, Medical Publishers, New York. 60 Patient Size. Price $2.00.

As a reminder of the approaching close of the year we have received the above volume.

Physicians all over the United States know this volume too well to need comment. In addition to supplying a calling list with financial entries for each patient there are a number of tables included.

It happens the reviewer delayed ordering his copy last year until the complete edition was sold out and the 1931 book coming out at this time is a suggestion to order early. —W. M. H.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr. M.D.
Medical Arts Bldg., Nashville

Deaths Under Anesthesia at the Adelaide Hospital During 1928. J. W. Rollinson, M.B., B.S., Anesthetist, Adelaide, Australia. Current Researches, Anesthesia and Analgesia, July, August, 1930.

Of 6,062 general anesthetics six deaths occurred. All these cases were recognized as unsuited for anesthesia and were only given to enable an operation to be performed as a last chance of prolonging life. No patients died of asphyxia. All were over 40 years of age except one. Death was not associated with any particular anesthetic. Cause of death was apparently heart failure due to effects of the anesthetic on a heart affected by severe illness or by loss of considerable quantities of blood. Deaths will continue to occur during anesthesia in grave cases. This series included a diabetic, intestinal obstruction, compound fracture of jaw and other injuries, cachexia from cancer, and severe hemorrhage from ruptured ectopic. Three of the deaths occurred during anesthesia and three after cessation.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Ethyl Iodide Inhalations in the Treatment of Mycotic Infections of the Skin and Allied Conditions. J. H. Swartz, M.D., Dermatologist, Beth Israel Hospital, Assistant in Dermatology, Harvard Medical School. H. L. Blumgart, M.D., Associate Professor of Medicine, Harvard Medical School; Director of Medical Research, Beth Israel Hospital; and M. D. Altschule, B.S., Boston.

The authors recommend the use of ethyl iodide by inhalation for mycotic infections. They claim that a relatively large amount of iodine is thus taken up by the arterial blood supply of the lungs and that only a small amount is returned in the venous blood, thus exposing the tissue to a relatively large amount of iodine.

They describe and show a diagram of the apparatus used for administration. Two grams is the dosage for adults and one gram is the dosage for children. The inhalation time was distributed over about twenty minutes.

Their conclusions are that ethyl iodide is nontoxic and easily administered to children as well as adults and that it has proven successful in epidermophytosis which was stubborn and resistant to all sorts of treatment. On account of the results obtained they recommend that it be tried in other conditions in which iodides are indicated, as asthma, hypertension and tertiary syphilis.

INTERNAL MEDICINE

By R. B. Wood, M.D.
C. J. Carmichael, M.D.
Knoxville

Symposium on Cardio-Vascular Syphilis, in American Heart Journal, October 1930. Syphilis, the Heart and Aorta, by Harrison S. Martland, M.D.

During the years 1925 to 1930 the author investigated 8,667 deaths, 3,325 autopsies being performed. Of these, 1,590 were cases of sudden death and of these 300 were autopsied. In the group rheumatic heart disease was the cause of death in 60 cases, syphilis of the heart and aorta in 101 cases, and arteriosclerotic heart disease in 139.

In the syphilitic cases there were 36 instances of predominating aortic regurgitation, 15 of stenosis and atresia of the coronary ostia, 38 of aortic aneurysm. Fifty-five per cent were in the colored population, which consisted of only 7 per cent of the population. It is the author's belief that clinical evidence appears fifteen to twenty years after infection. Genuine syphilitic heart disease usually occurs at a date earlier than arteriosclerotic and later than the rheumatic types.

As to the biological development of syphilis it appears that an early septicemia occurs, entrances taking place through the lymphatics or the blood stream directly from the point of infection. While septicemia persists for a very short time already the spirochetes have reached all parts of the body, including the myocardium, and which, owing to its limited lymphatic supply, is unable to rid itself of the parasite. This focus may later be the site of fibrous changes. However, the chief early change in syphilis is about the vasa vasorum of the adventitia of the aortic root, which involvement is the result of lymphatic invasion of the spirochetes from the resovoirs of the mediastinal lymph nodes.

Congenital luetic disease of the heart and aorta is extremely rare, being found almost exclusively in still births and those dying shortly after birth.

The chief lesion in acquired syphilis of the aorta is a supra-valvular sclerosis which may manifest itself as:

(1) Small isolated areas of sclerosis.

(2) Larger areas which become confluent and convert the aortic arch into a thick rubbery tube.

(3) As triangular patches of sclerosis which

infiltrate between the commissures of the aortic cusps causing regurgitation.

(4) By extension of the scarring process over the coronary ostia with narrowing or complete atresia of one or both arteries.

(5) By weakening of the wall and production of aneurysm.

(6) By combination of any of the above.

The gross pathology (James G. Carr, M.D., Chicago), noted in syphilitic aortitis except for predominant left ventricular hypertrophy is not unlike that of essential hypertension. The incidence of myocardial degeneration as a result syphilitic involvement of coronaries is not great. Aortic insufficiency is found in about 20 per cent of the hearts associated with syphilitic aortitis.

The inflammatory reaction (Chauncey C. Mayer, M.D., Chicago), presumably due to syphilis, was found to be a lymphocytic and plasma cell infiltration about the coronary arteries and their branches and in the visceral pericardium in five cases of aortic disease.

Horine and Weiss studied a group of 666 patients with essential hypertension and 2,000 nonhypertension subjects of similar ages and economic status. The incidence of syphilis was practically the same in the two groups.

Previtali and others state in contrast to the findings in acquired syphilis, we were unable to detect by available methods of physical examination any cardio-vascular lesion in the fifty cases of congenital syphilis examined.

McCullock also states he found no evidence that congenital syphilis contributes to the incidence of heart disease in children up to the age of fifteen years.

From the roentgenological side (David Steel, Cleveland, Ohio), there are cases of syphilitic aortitis which present definite changes which are indistinguishable from other common lesion of the aorta. Syphilitic aortitis can be suspected when a diffuse dilation is present and is associated with a normal size heart silhouette. (2) A dense high aorta is present in a young individual without a previous hypertension.

Chester M. Kurtz, M.D., and J. A. E. Eyster, M.D., state that in a series of 54 cases of acquired and 12 cases of congenital syphilis evidence of aortitis was found flouroscopically in 90.7 per cent of the former and 36.4 per cent of the latter.

(Symptoms and Treatment will follow in next issue).

The Medical Clinics of North America, September, 1930. The Newer Aids to Diagnosis and Prognosis in Tuberculosis, Dr. Charles A. Doan. Rockefeller Institute for Medical Research, New York.

Almost daily there is occurring in medical literature that which appears to be epoch making in the field of scientific medicine, but so much of this is found later to be premature that the profession has become somewhat suspicious of much that is printed.

In the Medical Clinic of North America, Sept., 1930, Dr. Doan makes a preliminary report of the research work under the title, "The Newer Aid to Diagnosis and Prognosis in Tuberculosis." This report covers the research being carried on in some twenty-one different laboratories throughout this country and deals largely with the practical and clinical problems of diagnosis, disease progression or regression, activity and inactivity. The facts brought forth in this report tend to show that by careful study of the peripheral blood count, we may soon be able to diagnose the disease and its stage much more accurately than we have been able to do thus far, with all the agencies at our command, not excepting the x-ray. It seems to be an established fact that there is a definite relationship clinically between the blood monocytes and the lymphocytes.

Their recent studies of chemico-biological reactions tend to show that the cellular manifestations in tuberculosis probably owe their activity to the lipoids and that the protein may be responsible for the toxic manifestations in this disease. Two points are emphasized. First, a great care should be exercised in the laboratory worker in staining sputum specimens to prevent overdecolorization whereby the small virulent, mildly acid fast organism may be lost. This is very important because this particular organism seems to be more virulent than those which are larger and more strongly acid fast. Second, these workers have pretty well demonstrated the ability of the laboratory through the study of plate cultures to demonstrate pathological changes either beneficent or harmful which will eventually help us clinically to answer the questions almost constantly put forward with every patient, "Doctor, am I improving?"

The character of the work and the results thus far obtained have every appearance of being epoch making in its very important field of laboratory and clinical medicine.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Prolonged Occlusion Test. F. W. Marlow. British Journal of Ophthalmology, Aug. 1930.

This article was called forth by the reference to this test in Maddox's paper on heterophoria. The conclusions based on the observations of about 1,400 patients are stated categorically with the reason for their adoptions. It is stated that low degrees of esophoria are always open to suspicion and often change to a hyperexophoria. Lateral deviations of moderate or low degree should not be ignored. Prisms are of high value for lateral deviations as well as for vertical, though not degree for degree. The constant wearing of prisms does not tend to increase the total deviations. Prism abduction bears no constant relation to the amount of exophoria. Postocclusion exophoria may greatly exceed the preocclusion abduction. The results of treatment on the postocclusion basis are far superior to those on the preocclusion basis. The phorias (exception perhaps some cases of esophoria), prism abduction and sursumduction and deorsumduction, which are nonpurposive in man, can best be explained on the theory that they are persistent vestiges of functions originally useful when panoramic or circumferential vision was important. Hyperphoria often varies in degree and even in kind. In different parts of the field of fixation, showing insufficiency of one or more muscles, it is important to measure not only the deviation, but the sursumduction and the deorsumduction after occlusion; the occlusion test usually makes no material difference to the near point of convergence. The blurring in the distance that sometimes accompanies a full correction of hyperopia is often due to accommodation spasms secondary to the convergence efforts necessary to overcome a deviating tendency (exophoria and hyperphoria), which may be quite latent. A diminution in the degree of myopia occasionally follows the correction of a muscle imbalance, the necessary corollary of which is that the determination of the muscle imbalance is an important factor in the prophylaxis of myopia. Exercise has probably no influence on the relative (anatomic) position of rest. Hyperphoria, usually associated with a lateral deviation, is the commonest form of heterophoria, exophoria being a close second, exophoria being comparatively rare. The rest of the paper is more or less controversial.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Acuff Building, Knoxville

An Operation for the Cure of Paralytic Genu Recuvatum. By Leo Mayer, M.D. Journal Bone and Joint Surgery, November 1931.

This operation is designed to cure severe paralytic Genu Recuvatum. The principle involved in the operation is similar to that of Willis Campbell who anchyloses the lower end of the patella to the tibea. The author goes a step further to obviate the difficulties involved in the Campbell operation of getting the patella down to the tibea and uses a bone graft to form the projection of bone.

A straight skin incision is followed by an inverted V incision through the tendon running to near the lateral ligaments. After retraction of the flap downward a portion of the fat pad is removed and the alar ligament is incised. A chisel 1½ inches wide is now driven transversely one inch into the tibea, the bevel of the chisel pointing anteriorly, the bone in front of this is pried forward. Into this cavity is driven a piece of bone removed from the tibea 2¼x1¼x3/16. It is beveled to make easy entrance. One inch is left extending above the tibea. The under surface of the patella is freed of cartilage and made to contact with the graft. The effect is to form a stop joint for the knee similar to the olecrenon of the elbow. He reports twelve operations and in all the recurvature was cured. He now fixes the knee at 135 degrees extension instead of ninety as formerly, following the operation.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

The Incidence of Recurrent Respiratory Infections in Childhood. C. C. McLean, M.D. Jour. A. M. A., Nov. 1, 1930.

Reports are quoted indicating that more than half the total deaths are due to respiratory diseases, and the ratio of respiratory illnesses to deaths from respiratory causes is 300 to 1. The author reports his observations on 582 patients with respiratory infections seen in private practice from September 1, 1928 to June 1, 1929, records being made as to recurrences. Of this number, 241, or 41.7 per cent, had one or more recurrent infections. Apparently, weather conditions had no effect on the number of either primary or recurrent infections. The recurrent infections occurred as often in the children with tonsils and adenoids removed as in those who had not had the operation. The peak of the incidence of primary infections occurred in December while the greatest number of recurrences was observed in February. The upper respiratory types of infection predominated, the larger number of cases being of a nasopharyngeal and tonsilar type. Otitis occurred in 103 patients, spasmodic croup in 43, cervical adenitis in 22, bronchitis in 120, lobar pneumonia in 15. Contact with individuals who had the disease seemed to have a marked influence on the number of primary infections, while it seemed to have little or no influence on the number of recurrent infections.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.

Doctors Building, Nashville

Verruca Plantaris. By J. Newton Sisk, M.D., Madison, Wisconsin. November, 1930, Radiology.

Verruca plantaris is frequently confused with plantar callus. It is very prevalent. The number of cases now being brought under observation is increasing rapidly since the heads of gymnasia and inspecting physicians have been warned to be on the lookout for it.

More attention is being paid to the various types of callosities of the feet. Verruca plantaris is seemingly an unimportant subject, but it may be very painful and cause disability. It is contagious and sometimes becomes endemic.

The causative organism has not been isolated, but gymnasia, shower baths, and swimming pools play an important role in etiology. Of 53 cases reported, three occurred in one family who used the same bath room. Six students in one sorority were infected.

Control is difficult. Disinfection of floors has been unsuccessful. Wearing slippers has proved effective in a few instances.

The diagnosis is simple but care should be exercised to differentiate it from simple callus. The location is an aid in arriving at conclusion. Warts are usually studded with translucent areas. They may show pin point dots or they may not. It is probably not active if these dots are absent. According to case histories there are periods of activity, quiescence, and exacerbation, extending over several years.

Verruca plantaris occurs most often on anterior half of the sole of the foot. It appeared on the heel in three cases. The transverse arch is a frequent site. Two patients presented multiple lesions apparently springing from one parent wart. Eight cases had discrete verrucas, three a single lesion, the rest had two or three discrete verrucas.

All of the 53 cases were treated successfully by x-ray therapy. This condition was found in various ages, sexes, color, race and occupation. The ages varied from 8 to 40 years. There were 46 females, including 33 students, 5 domestics, 3 stenographers, 2 cashiers, and 3 nurses. Of the 7 men, 2 were doctors, one a minister, one a jockey, two students and one a jaintor.

Three cases had electrodesiccation three months previously. This proved painful and unsuccessful. One case was treated with radium for an hour without results. Three cases had successful surgical procedure, but had a long, painful, disabling convalescence. With two exceptions, pain was relieved after the fourth day by x-rays and four weeks usually sufficed for recovery. The longest period was seven weeks.

Two skin unites of unfiltered x-ray therapy was given to the lesion, protecting the surrounding skin. If required, a second dose was given in three weeks. It usually consisted on 1½ units. Further treatment was necessary in only two patients. One case required five treatments. None of the patients were disabled. Many of them stated that the lesion was tender to pressure a day or two, several days after treatment.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Acute Intestinal Obstruction. Wilkie, D. P. D. The Bristol Medico-Chirurgical Journal. 47:97-110. Summer 1930.

There are no cases in medical practice so dramatic and so urgent in their appeal for relief as those of intestinal obstruction. Opinions may differ as to the correct line of treatment to be followed in many diseases, but for a mechanical obstruction of the bowel there can be only one treatment, namely, surgical intervention.

Among the great variety of pathological conditions responsible for intestinal obstruction we may distinguish certain fundamental types. These are:

1. Simple obstruction of the intestinal lumen.
2. Closed loop obstruction.
3. Interference with the vascular supply of the intestine.
4. Strangulation.

A fifth type, the so-called adynamic ileus of peritonitis, is discussed. In a number of cases these types may be combined, nevertheless they must be analyzed separately.

Paralytic Ileus: It is now beyond doubt that many patients suffering from acute peritonitis infection per se, as from the effects of a superimposed intestinal obstruction. It has been customary to designate such obstruction paralytic or adynamic, and to postulate that paresis of the intestinal wall, consequent on the peritoneal infection and toxemia, is the underlying cause.

Two methods of dealing with such obstructions suggested themselves. The one was to explore the abdomen, breaking down recent adhesions and endeavoring to prevent their reformation by smearing the surface with an oily substance. Sterilized liquid paraffin was the substance recommended. The other method was to perform a temporary entrostomy to relieve the distention of the obstructed gut and give it a chance to recover tone whilst the natural resolution of the plastic adhesions occurred. Both methods proved successful in practice, but the latter was the much more generally applicable, and, therefore, to be preferred.

A group of cases is left, however, where the peritoneal infection has been generalized, where a true paresis is present, where clinically the absence of all colicky pain raises little suspicion of any organic obstruction, and where enterostomy, except as an inlet for lavage and for nourishment, gives little benefit. In such cases fomentations, subcutaneous saline, morphia and possibly bile enemas, indeed the old treatment of peritonitis, offer as much hope as any surgical measure. Clinically the important point is to distinguish the true mechanically obstructed cases, usually associated with pelvic peritonitis and accompanied by colicky pains, from the true adynamic type. In all of the former and in doubtful cases, the patient should be given the benefit of a jejunostomy.

There are certain points in diagnosis which require emphasis. The all important question, in the presence of a case of acute abdominal colic with vomiting, arises: Is there an organic obstruction of the intestine requiring immediate operation, or is the trouble one which brooks delay? The presence of shock, if renal colic is excluded, will leave little doubt that some form of strangulation has occurred and operation is urgently called for. If the patient is the subject of valvular heart disease, an embolism may be suspected. Acute pancreatitis may simulate a strangulation, but requires equally prompt surgical intervention. The type of patient, a history of biliary trouble, slight lividity of the skin and epigastric tenderness and fullness, will suggest pancreatitis. It may seem impertinent to remind you to examine carefully for hernia in all cases, and especially femoral hernia, but few of us are blameless in this matter. If a small femoral hernia swelling is present, no matter how painless and insignificant in size, it is almost certainly the cause of the symptoms and should be dealt with. It should be remembered that abdominal distention is usually absent during the early stages of all cases of high intestinal obstruction, and that behind a muscular abdominal wall several distended jejunal coils may be readily concealed. The presence of intestinal splashing on dipping palpation is pathognomonic of obstruction, and is an indication for surgical interference.

An obstructed appendix may give few local signs, but if intermittent colic and vomiting have occurred and slight tenderness and rigidity are found in the iliac region, no delay in operating is justifiable.

In cases where symptoms have been present for some days, and abdominal distention exists when the patient is first seen, diagnosis is often more difficult. The continuance of colic-like pains with obstipation points to an organic obstruction which may be in the colon. If colic is absent, a peritonitis of appendicular or pelvic origin is likely.

It must not be forgotten that an acute obstructive cholecystitis in old may give rise to obstipation with abdominal distention, mainly right-sided and cecal and simulate closely that due to carcinoma of the colon, nor must the flatulent distention associated with a stone in the ureter be overlooked. Such cases, however, while they may challenge diagnosis, are seldom neglected. It is the early case, with impressive symptoms but few physical signs, which is apt to escape diagnosis.

Surgical Treatment—While prompt interference is rightly described as the fundamental factor of success, hurry may result in disaster. When a dehydrated patient, who has been vomiting feculent material, is brought straight to the operating theater and anesthetized, avoidable risks are being taken. Vomiting may result in drowning or aspiration pneumonia. A heart acting feebly on a diminished blood volume may give out ere the operation is completed. A preoperative delay of from 30 to 40 minutes, during which two pints of saline are given subcutaneously and the stomach is washed out, should be a standard procedure in these cases.

Anesthesia—An operation which is so often exploratory, in so far as the true nature of the cause of obstruction is not known, may appear to demand a general anesthesia. The advantages of spinal anaesthesia must not, however, be overlooked. The reduction of shock and the perfect relaxation obtained by this method are strong points in its favor, and if a skilled anaesthesia is not at hand, it is unquestionable the method of choice. Where the obstruction is obviously due to a tumor of the colon, a local anaesthetic will suffice for a cecostomy.

Operative technic does not concern us here. It will suffice to say that the less that is done, consistent with relieving the obstruction and leaving no devitalized bowel behind, the better. In the after treatment, the continued need for fluid containing salt and glucose, the benefit from hypertonic salt solution given intravenously and the value of the stomach tube, must ever be kept in mind.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Intravenous Urography. Herman L. Kretschmer. S. G. & O., Vol. LI, No. 3, September, 1930.

The author has used uroselectan in a series of 85 cases, including both sexes, in both adults and children. His observation is as follows: There were no local reactions except in rare instances, nor pain nor systemic reactions as chills and fever. There was occasionally a transitory feeling of thirst and a flushing of the head and face.

Ten of these were in infants and children. Four of these gave excellent urograms. In one case no filling was observed after two injections. This patient died twenty-one days later from kidney insufficiency.

He found that congenital anamolies were easily demonstrated. The important ones were horseshoe kidney, bifid pelvis, and solitary kidney. The last named condition was encountered in a stone case. No urogram being obtained on the other side, cystoscopy and chromo ureterogram was done, but no ureter was found. The diagnosis was verified further by operation and the stone removed.

Congenital polycystic disease did not show as well as did pyelograms made by catheters from below.

The best results were obtained in hydronephroses and hydro-ureters, particularly was it clear cut in unilateral cases because of the contrast to the normal side.

In ureteral stones, uroselectan was a great aid in determining whether surgical removal should be carried out or whether urine was passing the stone.

The problems of interpretation were not materially increased from that of urograms made from below.

One case where there was ureteral obstruction to catheters being passed from below, was determined to be normal by uroselectan.

In the end the author emphasizes that though this intravenous urography is excellent, in pyelo-ureterogram in many conditions it does not supplant the cystoscopic route in diagnosis, namely, determining the presence of pus and blood, bladder involvement, and bacteriological studies.

I might add that we have recently had a case where there were bilateral strictures of the intramural ureter that had all symptoms of tuberculosis. Catheters could not be passed, but the diagnosis was made by uroselectan and the strictures subsequently dilated with complete relief.

Late Syphilis in the Practice of General Urology. By Neil S. Moore, M.D., F.A.C.S., St. Louis. The American Journal of Syphilis, Vol. xiv, April, 1930.

Moore selects eight cases with late syphilitic lesions of the geneto-urinary organs. All organs were represented in this series. The diagnosis was made by symptoms and signs referrable to the genito-urinary tract, and uriological and seriological examinations as far as possible, though some had to be determined by clinical signs and therapeutic results mainly. Histopathological examinations were of no value. The anatomical involvements listed are as follows:

1. Late lesions of the glans penis. There are usually deep and destructive. They improve slowly but definitely under intensive treatment.
2. Urethral involvement where there is a dense infilliation from the meatus to the bulb. This is the presence of syphilitic history he considers fairly typical of syphilis. Such lesions yield to local and general treatment.
3. Recurrent swelling of the epididymis or testicle is suspicious of syphilis and warrants a Waserman in all such cases, even in the presence of a gonococcal history. The scrotal structures may be singly or collectively involved. The condition is amenable to antisyphilitic treatment.
4. Prostatic or vesicular involvement is not uncommonly mixed with progenic involvement. Such complicated infections are stubborn to treatment until luetic infection is recognized and treated appropriately.
5. Bladder wall involvement. This is characterized by ulceration, and such symptoms as pain, frequency and hematuria. Pyogenic infection is absent. Symptoms promptly subside under antiluetic treatment.
6. Neurogenic bladders are affected secondarily through nerve involvement in the cord. The condition is characterized by urinary difficulty or incontinence, residual urine, and certain cystoscopic and cystographic findings. The diagnosis is made by simple neurologic examination and spinal fluid test. Early cases can be benefited by treatment of the cause.
7. Stricture is probably the most important syphilitic lesion of the ureter. It yields to dilatation and antiluetic treatment.
8. Kidney involvement may exist in the various stages of syphilis. Although the most common type is albuminuria, which occurs in the secondary stage, gummata have been found and described. It is probable that many of the hematurias are of gummatous origin.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXIII DECEMBER, 1930 No. 12

PROCEEDINGS OF THE HOUSE OF DELEGATES, TENNESSEE STATE MEDICAL ASSOCIATION, NASHVILLE, APRIL 8-10, 1930

TUESDAY AFTERNOON
APRIL 8, 1930

The opening session of the House of Delegates, held in connection with the Centennial Celebration of the Tennessee State Medical Association, at the Hotel Hermitage, Nashville, Tennessee, convened at two-five o'clock, Secretary Shoulders presiding.

THE SECRETARY: The House will please come to order.

Owing to the illness of your Speaker, it becomes the duty of the Secretary to call the House to order and to call for the nomination of someone to serve as temporary chairman or presiding officer of the House during the Speaker's illness. Dr. Cowden told me last night that he expected to be here today, but his doctors prevailed upon him not to come, but he said he would be here tomorrow. At any rate, it will be necessary to elect a temporary officer. Nominations for such office are now in order.

DR. W. L. WILLIAMSON (Memphis): We have a man here who has served very faithfully and efficiently in that capacity for six years, who has never missed roll call or a meeting. I think he would be a man familiar with the affairs of the Society and would make a president who would handle the business of the House of Delegates with dispatch. I should like to place in nomination Dr. H. B. Everett.

(The nomination of Dr. H. B. Everett was regularly seconded. Upon motion duly made, seconded and carried, nominations were closed.)

THE SECRETARY: The question is now on the election of Dr. Everett as Speaker. Those in favor please say "aye"; opposed "no." Dr. Everett will take the chair.

(Dr. Everett took the chair.)

THE SPEAKER PRO TEM: Mr. Secretary and Gentlemen: I appreciate this very much. While our regular Speaker is not at hand, we will try to get organized and going in prompt order.

Mr. Secretary, what is the first order of business?

THE SECRETARY: Calling the roll of Delegates, Mr. Speaker.

(The Secretary called the roll of Delegates.)

THE SECRETARY: This roll of Delegates is made up from certificates forwarded to the office, according to By-laws, ten days in advance of this meeting. There are other certificates that have been handed to Miss Batey or myself since the meeting opened, which the Credentials Committee will act upon.

There is one from Hamblen County which shows that Professor D. E. Shields was elected a Delegate. The next handed in this morning was from Brownsville, which is Haywood County. The Delegate is T. C. Chapman.

Mr. President, I move the appointment of a Credentials Committee to pass on the question of seating of Delegates.

THE SPEAKER PRO TEM: Gentlemen, I shall appoint on that Committee:

Dr. H. H. Taylor, Cookeville.

Dr. Stewart Lawwill, Chattanooga.

Dr. A. B. DeLoach, Memphis.

I take it we shall have to adjourn for a few minutes until the Credentials Committee passes on all other members.

There are some counties that I noticed no one answered to the roll call. The By-laws state that Delegates shall be properly certified to the Secretary ten days in advance of the meeting. I suppose the Credentials Committee will want some instruction as to what you wish to do in the counties that have not been certified to, whether you wish to seat some member present or let that county go without any representation.

Is that right, Mr. Secretary?

THE SECRETARY: That is the pleasure of the body.

THE SPEAKER PRO TEM: Those are the facts stated, as to the By-laws.

THE SECRETARY: Yes.

THE SPEAKER PRO TEM: What is your pleasure regarding those?

DR. W. K. SHEDDAN (Columbia): The By-laws expressly state that it must be either the Delegate or the Alternate. You can't take some other man in the county and seat him. That is the way it was interpreted and handled last year. I think it saves a lot of trouble.

I move you, sir, if it is necessary for a motion, that no one be seated by the Credentials Committee except those elected by their societies as Delegates or Alternates.

THE SPEAKER PRO TEM: Does that meet with a second? Dr. Sheddan's motion is that no member be seated except those who have been regularly certified to in accordance with the Constitution and By-laws; that is, that no member be seated except those who have been certified to the Secretary ten days in advance of the meeting.

DR. E. H. BAIRD (Dyersburg): What is the interpretation of the Chair as to that provision? Is that, as the Secretary said, up to this body, or do we have to abide by that Constitution?

THE SPEAKER PRO TEM: The only way in which we can legally seat other members is by this body waiving that portion of the By-laws and seating members from counties that are not otherwise represented.

DR. D. E. SHIELDS (Morristown): Does the Credentials Committee report that?

THE SPEAKER PRO TEM: The point was whether or not the Committee will hold strictly to the By-laws or waive that section of the By-laws.

DR. L. L. SHEDDAN (Fayetteville): I want to say that the Speaker of the House of Delegates ruled according to the Constitution and By-laws. In the past we have been accused in this House a number of times of seating men who happened to be from certain counties, at the last minute, in order to carry elections and carrying over the will of the Association. We have been accused of seating men who were not duly authorized as Delegates to the Tennessee State Medical Association.

The same thing came before the House of Delegates in the American Medical Association last year in Portland. They had had exactly the same experience that we had had in Tennessee in seating men from different states who were not duly authorized or duly accredited members. So the Speaker of the House ruled that only those men who were duly accredited as Delegates from their states could be seated, or their Alternates, and after once seated the men taking their seats had to occupy them throughout the whole session, that they could not delegate it to their Alternates or anyone else when they left.

If it is done according to the Constitution and By-laws it will prevent snap judgment on the part of anybody who may have an ax to grind. It has been so announced in our State Journal. Our county societies and members of the county societies have been duly warned that they must have their duly authorized representatives here or they cannot have any representation. Personally I would rather see it the other way. I fought against it a year ago. I tried to make my best fight, but there is a measure of justice in it.

As this has been the ruling of the House of Delegates of the American Medical Association, as Dr. Everett will remember, I think we have to abide by the Constitution and By-laws.

DR. A. E. DeLOACH (Memphis): A Credentials Committee has been appointed. What shall its functions be? Are they to be guided by the decision of the Chair or are they to go into each individual case and render judgment as their better judgment dictates, then bring back their recommendations to the House for ratification or for consideration? There are some cases that are rather unusual. I know there is one gentleman here present who is the president of his medical society, and he was not certified to by reason of the fact that the secretary of his society resigned, and he could not get certification. I know that gentleman is in the House of Delegates now.

THE SPEAKER PRO TEM: Dr. Sheddan's motion is before the House without a second. Does anybody wish to second Dr. Sheddan's motion?

DR. D. E. SHIELDS (Morristown): I think this is a question the Credentials Committee won't have anything to do with. My society elected its Delegate in August but the secretary did not send it in. Before leaving town I had the secretary, P. L. Henderson, and the president, S. M. Ryburn, make out an authorized statement that they wanted me to represent them.

THE SPEAKER PRO TEM: Shall we leave this with the Credentials Committee?

DR. E. H. BAIRD (Dyersburg): I move that all the Delegates who have been certified to by their secretaries or presidents up to the present time be elected to the House of Delegates.

THE SPEAKER PRO TEM: That is not necessary. They automatically become members.

Dr. E. H. BAIRD (Dyersburg): A provision keeps out some members, like the doctor from Brownsville. Because a secretary has been delinquent in notifying the State Secretary, I don't think these men who legitimately were elected to this body should be kept out. I think they should be elected. I move you to that effect.

(The motion was regularly seconded.)

THE SPEAKER PRO TEM: It has been regularly moved and seconded that all members presenting credentials from their county societies be seated as regular Delegates. Are you ready for the question? All in favor of the motion say "aye"; opposed. It is carried.

Shall we leave the matter of other county societies to the Credentials Committee?

DR. D. E. SHIELDS (Morristown): I move we leave that with the Credentials Committee.

DR. R. M. LITTLE (Martin): I second Dr. Shields' motion.

THE SPEAKER PRO TEM: The motion is before you. What shall you do with it?

DR. W. K. SHEDDAN (Columbia): That is going back to the old custom of a man coming in today and qualifying as a Delegate for his society, who has not been delegated by his society but has been sent here as an Alternate. It is continuously a report of the Credentials Committee a half dozen times a day so some fellow can vote on some proposition. I am bitterly opposed to anybody being seated except those reported by their county societies.

THE SPEAKER PRO TEM: Gentlemen, are you ready for the question? All in favor of the motion will let it be known by saying "aye"; contrary "no."

Gentlemen, Dr. Shields' motion is that the matter of seating Delegates from counties that have failed to certify their Delegates according to the By-laws be left entirely with the Credentials Committee. All in favor of the motion let it be known by rising and the Secretary will count. (Thirty). All opposed to the motion let it be known by rising. (Four).

DR. J. W. REED (Belfast): I am on the floor for the first time. I want to know if this body has a right to change the By-laws any minute or any hour they want to. If not, I move you are out of order. If there is a clause in the By-laws that says that these rules should be stated one year ahead, you can't change it in this meeting today. It must be put in here and carried over to next year. I am a new member. I am asking for information.

If there is a clause of that kind, I rule that everything we have done here is out of order, according to that.

THE SPEAKER PRO TEM: We have not yet been organized, Doctor. That is the point we are getting at now as to who shall be a regularly accredited Delegate. Immediately after that matter is settled, then the Credentials Committee will bring in their report on these other matters. I will state very plainly that it is immaterial to me which way this body rules. They have a right, as I understand, to suspend the By-laws and make such rules.

DR. W. K. SHEDDAN (Columbia): Who gives them the right to suspend the By-laws?

THE SPEAKER PRO TEM: You may suspend the By-laws in a matter of policy of this kind.

DR. D. E. SHIELDS (Morristown): Let us have the result on the vote.

THE SPEAKER PRO TEM: It was 30 to 4.

DR. D. E. SHIELDS (Morristown): I move we recess until the Credentials Committee reports.

DR. E. H. BIARD (Dyersburg): I second the motion.

(The motion was put to a vote, and the House recessed for a short period.)

THE SPEAKER PRO TEM: The House will please come to order.

The Secretary has an announcement he wishes to make.

THE SECRETARY: Gentlemen, one of our very distinguished guest speakers is now ready to speak. I know that most of you would like to hear him. It seems that this Committee has a number of matters to consider.

I move that we recess to hear Dr. Fishbein and then come back into session at any hour you may see fit to designate.

THE SPEAKER PRO TEM: I think that is all very well but there should be some time set as to when we shall reconvene.

DR. E. H. BAIRD (Dyersburg): I move we adjourn until four p. m.

(The motion was regularly seconded and carried. The meeting recessed at two-forty o'clock to reconvene at four o'clock.)

THE SPEAKER PRO TEM: The hour has arrived for reconvening.

The first order of business will be the report of the Credentials Committee. We will hear from Dr. Taylor, Chairman.

DR. J. P. TAYLOR (Wartrace): Your Committee on Credeint has ruled that only those holding properly attested certificates shall be seated, and, in accordance with that ruling, beg to recommend that the following delegates be seated:

Dr. L. E. Coolidge, Green County.

Dr. T. B. Yancy, Sullivan County.

Dr. T. C. Chapman, Haywood County.

THE SPEAKER PRO TEM: Gentlemen, you have heard the Credentials Committee's report.

DR. W. K. SHEDDAN (Columbia): I move the adoption of the Credentials Committee's report.

DR. E. R. ZEMP (Knoxville): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: I declare a quorum present and the House regularly organized for attending to business.

Gentlemen, the first order of business will be the selection of the Nominating Committee. This, in accordance with the By-laws, is to be done at this meeting. I will ask the Secretary to read the section of the By-laws pertaining to the selection of a Nominating Committee and will ask that the Committee be guided by the By-laws in their selection and in their action.

Dr. Shoulders being absent, I have asked Dr. Wood to act as temporary Secretary for us.

(Dr. R. B. Wood, Knoxville, read the section of the By-laws pertaining to the selection of the Nominating Committee.)

THE SPEAKER PRO TEM: Gentlemen, you have heard the Secretary read the By-laws. I shall now declare a recess of five minutes for the selection of this Nominating Committee.

(Recess.)

THE SPEAKER PRO TEM: Gentlemen, if you will hand in the list that each division has selected we will ask the Secretary to read the report so it may get into the record.

THE SECRETARY PRO TEM: Those from Middle Tennessee are:

W. K. Sheddan
Joe Wright
C. M. Hamilton

East Tennessee:

D. E. Shields
J. C. Brooks
Tom Barry

West Tennessee:

J. D. Brewer
R. M. Little
W. L. Williamson

THE SPEAKER PRO TEM: Gentlemen, this constitutes the Nominating Committee. That Committee is to hold as many meetings as are necessary to bring in the proper nominations. The Secretary will furnish you a list of the offices to be filled by this body on the morning of the last day.

DR. W. K. SHEDDAN (Columbia): I should like to make a suggestion that you ask this Nominating Committee to stay in this hall and meet for an organization immediately on the adjournment of this House of Delegates.

THE SPEAKER PRO TEM: Gentlemen, you have heard Dr. Sheddan's request. You will take due notice and govern yourselves accordingly.

The next order of business is the report of the Secretary. The Secretary being absent, we will have to defer his report until a later meeting.

The next report is the Treasurer's report.

THE TREASURER: I have here the audit of the books of the State Society for the past year. I hardly think it is worth while to go into any detail in this meeting by reading these figures.

I want to suggest that a committee be appointed to audit this account and report on it.

DR. W. K. SHEDDAN (Columbia): I move that the report of the Treasurer be accepted and that the Speaker appoint an Auditing Committee.

DR. D. E. SHIELDS (Hamblen): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: I shall appoint on the Auditing Committee:

S. R. Miller, Knoxville
E. T. Newell, Chattanooga
A. F. Richards.

That Committee will look over the Treasurer's report and bring in their report at a later date.

The next order of business is committee reports. The first report is that of the Committee on Scientific Work. Is there a member of the Committee on Scientific Work present?

DR. E. R. ZEMP (Knoxville): I am here but I have no report.

THE SPEAKER PRO TEM: It has been customary for some members of the Committee to offer the program.

DR. L. L. SHEDDAN (Fayetteville): I move that the House of Delegates accept the official program of the Association as the report of the Committee on Scientific Work.

DR. A. G. NICHOL (Nashville): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: The next report will be that of the Committee on Memoirs, Dr. W. K. Sheddan of Columbia, Chairman.

DR. W. K. SHEDDAN (Columbia): The Committee has never had a meeting. I have a report from one county, my own county, and I should like to ask that that be deferred until tomorrow morning.

Gentlemen, I see the Secretary has just come in. We just passed your report, Mr. Secretary. We shall be glad to refer back to that if you are ready to make the report.

THE SECRETARY: Mr. Chairman, we have a performance on tonight and I am making preparations for it. I ask that you excuse me and allow me to report tomorrow.

THE SPEAKER PRO TEM: Gentlemen, without objection, the Chair will excuse Dr. Shoulders from making his report until tomorrow morning.

The next report will be that of the Committee on Cancer, Dr. Battle Malone, Chairman. The other members are E. T. Newell and A. G. Kern.

DR. E. T. NEWELL (Chattanooga): Dr. Malone has the report. He worked it up, and it has been signed by Dr. Malone, Dr. Kern and myself. I am very sorry that I haven't a copy of it. Dr. Malone is here but he is not in the House of Delegates, so the only thing that I can do is to move you that we postpone it until a later time this afternoon or until tomorrow.

THE SPEAKER PRO TEM: Without objection, gentlemen, we shall pass this report until some later date.

The next Committee is that on Medical Defense, Dr. S. R. Miller, Chairman.

DR. S. R. MILLER (Knoxville): Mr. Chairman and Gentlemen: We have our report complete and I shall read it.

(Dr. Miller read the report of the Committee on Medical Defense (with the interpolations in parenthesis).

MEDICAL DEFENSE REPORT

Your committee herewith submits the sixteenth annual report of the Association's activities in defending paying members in alleged malpractice suits.

Formerly the report was made as of April 1st to March 31st. Two years ago it was changed to March 1st, to allow printing of the report before the annual meeting. This year it is again changed to January 1st, to conform to the fiscal year of the journal and other Association work, and to simplify the annual report to the A. M. A. Committee.

Last year we reported six non-suits that could be refiled. Two of these have been refiled. These two, with the twenty-two on docket last year made a total of twenty-four suits from last year.

To January 1st, 1930, we had six suits filed, or a total of thirty-five suits on docket in the ten months.

One other suit was refused defense on account of the member's failure to pay his defense fee covering the time of the alleged malpractice. Also two threats were referred to the Committee.

Of the thirty-five suits, two were before the Court of Appeals. One was reversed and dismissed by that court, and the other affirmed. It was then appealed by the defendant to the Supreme Court.

Three cases have been won in the Lower Court. Five have taken non-suit, and three have been compromised. We have therefore one suit in the Superme Court, and sixteen in the Lower Court, and two potential non-suits.

If you have followed this report closely, you will observe that some non-suits have been revived from last year and re-non-suited, and others have non-suited this year and refiled the suit.

As accurately as we can estimate, about seventy per cent of suits are filed on pauper's oath. Every defendant will not report on that point when written for that specific information. (If you write the doctor a questionnaire and ask him a dozen questions, you will do well if you get an answer to a few of them. Why, I don't know. It seems to be in the make-up of the doctor.)

Perhaps more than fifteen per cent of trials result in non-suit. Less than six per cent of suits result in compromise, and less than two per cent in judgment against the defendant doctor.

The compromise figures do not include compromise made before suit is filed, as this Committee may not know of such.

It is a great tax upon the doctors and our counties to have so many pauper oath and non-suit cases, which result in much expense to doctors and much more to the counties. (I don't know whether everybody knows about a non-suit. If you bring up a case and the man can't get all of his witnesses there, as in some cases they can't get a doctor to appear against another doctor, and the judge is about to charge the jury to render a verdict, the man suddenly takes a non-suit. He has a year to refile that suit. Many times they will rehash it again. Things get compromised. We have one suit in one county that has been non-suited four times. The cost of these cases is never less than $40 to the county, sometimes $100, $200, $300 and $500.)

If a proper tribunal, probably one of the county judges, could be allowed to pass judgment upon the merits of both sides given him confidentially before permission could be given either to file the suit on pauper's oath, or take a voluntary non-suit, it would save the doctors and the counties much expense, and the doctors and plaintiffs and their witnesses much time.

Such remedy can only be provided by our legislative body, which does not seem to function in this direction.

Receipts for Year Ending Dec. 31, 1929

From Members	$2,380.00
5% Dividend Peoples Savings Bank	80.13
Total Receipts for Year 1929	$2,460.13
Disbursements for Year 1929	$1,921.25
Excess Receipts over Disbursements for 1929	$ 538.88
Receipts for Year Ending Mar. 31, 1930	$2,349.00

Receipts for Year Ending Mar. 31, 1930

Disbursements for Year Ending Mar. 31. 1930	$2,183.41
Excess of Receipts over Disbursements for Year Ending Mar. 31, 1930	$ 165.59

(Mr. Chairman, the Treasurer has furnished us the figures that we have. We never have been able to give those before because our years differed. We are now getting our years to correspond. We have a balance on hand as of December 31 of $2,174.03. We have spent some money since then. Our last year's expenses were $1,921 as given by the Treasurer, but we have some large suits in there. There are some suits that were tried for several days. We had one suit in this county that was tried twenty days. Just think about a suit being tried twenty days! Of course we paid the bill out of the $1,900. We had some other suits that went on for five, six and seven days. So I don't expect that our next year's expenses, unless we get rid of all these suits, will be as much as this year, and then we will have some money left over.)

On this suit that was tried here twenty days, Dr. Shoulders wrote me for the information about the way this work was conducted. We have certain rules the Committee and the House of Delegates established from time to time during the sixteen years, and I have tried to find those all in one place but I couldn't. I have gathered them together. The year before we started this work almost every Journal had some editorial touching some phase of the Medical Defense Committee. I have embodied that in this report, and I should like the Secretary, when this is printed in the minutes, to furnish some extra copies and send them to the county secretaries so they can have them, and when a suit is brought they will know something about it. It is wonderful how little they do know about it.)

In 1914 almost every issue of the Journal had an editorial or report from the Committee concerning the Medical Defense which went into effect in January, 1915. In the December, 1914, Journal, the Committee set forth at length the rules governing Medical Defense.

As sixteen years have lapsed since that date, it is suggested that the Committee report to you again briefly the rules and conditions applying to Medical Defense, including minor changes that have been made to date.

First: Medical Defense is given in alleged malpractice suits, and not in criminal or collection suits.

Second: To be entitled to Medical Defense, the member must have paid the Medical Defense fee of $2.00 covering the period of time of the alleged malpractice. (If a man had a case last year and the middle of this year finds that he is going to be sued for that case, he pays his medical defense fee to get protection. That is not good business and that is not insurance. If he had paid it last year and then notified us this year that suit was brought for the alleged malparctice last year, he would get some defense.)

Third: The Association is not responsible for a judgment, if any, or for the amount agreed upon by the doctor for compromise, but does pay for counsel employed by the Defense Committee, and for the court costs incident to the trial.

Fourth: The Association does not pay for private counsel employed by the defendant doctor, but only for counsel employed by the Defense Committee, which already has retained counsel in many of the counties.

Fifth: The Committee will cooperate with the defendant doctor and counsel, in securing medical and expert witnesses necessary for the proper defense of the suit.

Sixth: The defense fee of $2.00 paid covers twelve months, from noon of the day it is received by the State Secretary, who keeps the record, except members of county societies, who have by resolution, or by-laws, pledged the society for the defense fee of each of its members in good standing, and such members are protected for the Association's fiscal year—namely the calendar year.

Seventh: The defendant member is required to furnish the Defense Committee with such detailed data as will enable the Committee to understand the essential details of the suit, and keep up proper records of all cases, for the purpose of making concrete report to the House of Delegates and the Defense Committee of the American Medical Association.

In all reports referred to above, no defendant doctor's name is ever used, but the cases are handled by numbers. (I think sometimes the doctors don't report them because they are afraid their names will get out. We never use a name, we use numbers, except in a private letter to the doctor.)

Eighth: If the defendant doctor has regular malpractice insurance in an insurance company, the Committee recognizes the insurance company's obligation both for defense and judgment, but if the defendant doctor, and the insurance company's counsel desire and request assistance from the Committee, we furnish Associate Counsel in the suit, and at the Association's expense.

Ninth: In threatened suits, the Committee advises with the doctor, and in compromises made voluntarily by the doctor, the Committee will, on request, furnish counsel to pass upon the legality of the compromise being effected by the doctor. (I don't know whether you are all lawyers enough to know the importance of it. If a child is trying to sue Dr. Sheddan, and Dr. Sheddan pays the father, that fixes up the father all right, but unless it is made a matter of court record, that child, when he becomes twenty-one years of age, can turn around and sue Dr. Sheddan. Unless it goes through the courts it is not legal. We furnish counsel to see that that is legal.)

Tenth: Members not residing in Tennessee will be defended in suits in Tennessee courts, but not in courts of other states, but members residing in Tennessee will be defended in suits brought in adjacent counties to Tennessee. (We had one case in Mississippi. The doctor was a member of the Tennessee Society. Suit was brought down there and we defended him. If a man is a member of the county society here and moves to New York or Chicago or San Francisco, and during the year has a suit brought against him out there, we won't defend him. As long as he is one of our members and is acting in good faith, we will defend him.)

I should like to have that printed along with our report so that the members will know what it is.

THE SPEAKER PRO TEM: Do you make that as a motion?

DR. W. K. SHEDDAN (Columbia): I move that the report of the Committee be adopted and also the suggestion of Dr. Miller.

DR. E. T. NEWELL (Chattanooga): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: Is there any further discussion regarding Dr. Miller's report? If not, we will pass the Defense Committee's report. The next report is that of the Committee on Hospitals, Dr. Robert Caldwell, Chairman. Dr. Caldwell does not seem to be present. Dr. Wood, has your Committee any report?

Dr. R. B. WOOD (Knoxville): I have no report to make for him.

THE SPEAKER PRO TEM: We shall pass that until a little later.

The next Committee is that on Public Policy and Legislation, Dr. Revington of Chattanooga, Chairman. (Abent.) Dr. L. L. Sheddan, Dr. W. L. Williamson, Dr. Duncan Eve, Jr., and Dr. J. E. Burch are the other members of the Committee. Has any of the members of the Committee a report?

DR. L. L. SHEDDAN (Fayetteville): There has been no meeting of this Committee. The legislature not having been in session, except in special session, this year, I judge there is no report for this Legislative Committee to make. I have not been notified of any meeting by Dr. Revington.

So far as I know there has been no action taken by this Legislative Committee within the last year.

THE SPEAKER PRO TEM: The next Committee is that on Public Health, Dr. Yancy, Chairman.

DR. T. B. YANCY (Kingsport): I am going to ask the Secretary to read my report.

(The Secretary Pro Tem read the report of the Committee on Public Health.)

REPORT OF PUBLIC HEALTH COMMITTEE
1930

From 1853 to 1877, the Tennessee Medical Association depended entirely on reports of cases and papers read at annual meetings for information of devastating epidemics.

The causes for smallpox, yellow fever, cholera, dysentery, diphtheria, typhoid fever, measles, mumps, whooping cough, scarlet fever, and all other infections and contageous diseases were little known, yet those fine gentlemen who realized their responsibility to their communities began a movement which planted the seeds from which grows our present State Board of Health.

Quoting verbatum from the petition of the Tennessee State Medical Association in 1874, we read:

"It is proper in order to a fair understanding of the subject, that it be prefaced with a statement of the relations of physicians to the public concerning it. If the profession of medicine knows little of Hygiene or Prevention of disease, which we shall not controvert, it will not be doubted that the public at large knows less." . . . "The profession asks no aid for itself, it being a maxim, dear to it that it must be self-sustaining; it only asks that its latent forces be revealed, stamped and utilized for public good."

Through the many years of experimentation and misguided efforts, we find the Health Department of today adhering closely to the above request that the latent forces be revealed, stamped and utilized for public good, and could every doctor in the medical profession of the State of Tennessee, feel that the State Department of Public Health is for his benefit and the protection of his community, many of the now latent forces would be utilized in bringing nearer health and happiness in every rural community.

We most heartily commend the action of the Liaison Committee, in approving the activities of our present Board in the year of 1929.

Vital Statistics

According to Dr. J. D. Plunkett's epitome of the transaction of the Tennessee State Medical Association read at its meeting here in Nashville, May 2, 1889. Dr. E. B. Haskins of Clarksville, Tennessee, offered a resolution in 1853, asking that the Legislature pass a law for the registration of births, marriages, and deaths, conceived in 1853, it took sixty years of legislative gestation for this child of the medical profession to be born in 1913. We commend the growth and efforts of this child of ours. It still needs the support of every member of our profession.

We recommend that in all counties where full time health officers are maintained that the department appoint him chief register of his county, with full power and duties, and repeal the law requiring the reporting to County Court Clerk in these counties by local registers.

There are several border-line counties, such as Sullivan, where hospitals, that are located just across the state line draw obstetrical cases. The births here are recorded in the state in which they occur, they robbing our state of many births, and the data on many deaths, which is valuable to this state department. We recommend that some form of certificate be exchanged between the two states. Citing Bristol, Tennessee, as an example. The hospital is located less than 200 feet from Tennessee State line, on the Virginia side, and serves in both states a population of 30,000 Tennesseans.

Tuberculosis

While there is a committee from this association to work with a committee from the Tennessee Tuberculosis Hospital Commission, we are justified in commending the work of the State Department of Health in its program of tuberculosis control. We recommend that the Legislature greatly increase the appropriation for field activities, both to the Department of Health and to the control of tuberculosis among cattle, which is prevalent in our rural communities.

Rural Health Service

The most outstanding work of the State Department of Health is to be in Rural Health Service. On County Health Unit.

In the fiscal year ending June, 1929, 99,831 typhoid immunizations were given, 39,450 diphtheria immunizations were given, 22,592 smallpox vaccinations, 18,486 sanitary privies were installed in the twenty-six counties, now working under this system.

Within the bounds of this committee a survey was made of the sanitary conditions existing in the rural communities of ten of the above mentioned twenty-six counties in 1911 to 1914. No typhoid immunization; no diphtheria immunization. Smallpox vaccination was not checked, but less than 200 privies of any kind per county were found in rural districts.

With the state and local appropriation bodies showing increased interest in the public health program, this committee respectfully urges our Association to recommend that County Societies put on a program of education for a full time Health Unit in every county in the state.

T. B. Yancey
K. S. Howlett.

THE SPEAKER PRO TEM: Gentlemen, you have heard this report. It is now before you for disposition.

DR. A. G. NICHOL (Nashville): I move it be approved.

DR. U. B. BOWDEN (Pelham): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: The next Committee is that on Medical Education, Dr. Joe Gallagher, Chairman. (Absent.) Is there any member of that Committee present? (None.)

We will have to pass that report. The next is the Liaison Committee on Public Health, Dr. McSwain of Paris, Chairman. (Absent.)

The next is the report of the Committee on Medical History, Dr. Savage, Chairman.

DR. S. R. MILLER (Knoxville): It becomes my painful duty to make this report that I had not anticipated making. This History Committee can properly be termed the Tragic Committee. As you all know, Dr. Roberts served on this Committee a few years and died, and the next year I was put on in his stead. Then Dr. Eve was taken ill and was not able to function last year. Dr. Savage and I got together and we asked this House of Delegates to put some other members on. They put Dr. W. K. Sheddan and Dr. Cowden on. Dr. Savage is gone. I understand Dr. Cowden is laid up in the hospital, not able to get out. That leaves Dr. Sheddan and myself as members of the Committee.

You will recall that last year you gave us instructions to print the best history we could and have it ready for delivery at this meeting, regardless of price. You gave us the right to draft any members of the Association for any kind of assistance and to make draft on the Treasurer as was necessary. We have done all these things.

We called on Dr. Bilbro, one of our own members, an old ex-Treasurer who served several years in the treasury end. He has done good work in connection with the local men. Dr. Moody from Shelbyville was drafted too, and he has done what he could do.

We have had three or four meetings in the last year. We had trouble with regard to the historian. When we had our last meeting we wanted to see what all we would want. We had various men appointed to get up various parts of the thing. I was appointed to get up the Pioneers of East Tennessee, Dr. Savage of Middle Tennessee, and he delegated that to Dr. Moody and Dr. Moody threw it back on him. I don't think it ever has been written. The last letter I had from Dr. Savage was that he found that almost all of the essential data about the pioneers of Middle Tennessee were in the organized medical files and would come out in the regular history. Dr. Cooper furnished us the Pioneers of West Tennessee, then Dr. Bishop and Dr. Breeding furnished it for the Board of Health and Dr. Warr furnished it on Medical Education and Dr. Litterer furnished the Advancement in Pathology and Bacteriology. Dr. Battle Malone furnished the Advancement in Surgery in the Hundred Years. We had a misfortune about some of these, particularly Dr. Malone's report. The local committee made arrangements or, rather, had bids from five different sources on the printing of this history. I don't know what the figures were. They were left to do that because there were some contingencies in regard to it. When we had our meeting the men didn't know how much they were supposed to put in. We discussed the thing at length and tried to give them an idea. When Dr. Malone's report came in there were about 130 pages. It was sent to Dr. Cowden's office. Dr. Cowden was sick and had been away for some time at Hot Springs, and the report laid in his office until it reached Dr. Hamer a week or ten days after the time when it should have been in the hands of the printer. Of course Dr. Hamer had to go over all this data as he was editor. That has been done in order to avoid a lot of overlapping, because with various men writing different things, there is likely to be a lot of overlapping or repetition. He worked on Dr. Malone's paper a couple of nights until two o'clock in the morning, so he told me. He said that it would take him three or four days to go through that and to get the gist of it because Dr. Malone had covered some of the pioneer history, he covered some of the first chapter on the history of this Association up to the Civil War, some of the chapter on Medical Education and probably some of the chapter on Health Matters. I told him to do the best he could and to send it out at once to the printer and ask the printer to print it, if he could, and get it out for delivery here; if he couldn't do that, to leave it and everything else out, if necessary. We wanted to keep our pledge to this body. That is the situation.

I understand the book has been printed and is ready for delivery except they wanted to press it today. I understand it will be delivered here tomorrow or the next day. I didn't know I was to make the report or I would have gone to the printer and found out about it. I can't tell what the price will be. We had a lot of pictures that came in. The book, as I understand, besides the index, is 572 pages. It is a nicely bound book. This is the first book I have seen. That doesn't make a bad-looking book. I wanted leather but they said that if a book is put away in the library and is not used very much, this binding holds better than the others.

We have quite a few pictures of the older men. Dr. Wood worked very hard to get pictures of the old people. You would be surprised how few of those pictures he got. He went up to Rogersville and interviewed Dr. Joseph Rogers Walker who was ninety-eight years old the twenty-fourth day of last August. He has a very vigorous mind. He never was active in the state organization but he was in the local organization. I think he attended only one state meeting at Knoxville. He may have attended others, but he remembered the earlier things better than the others.

That is the situation of the Committee on Medical History. We tried to keep the book down to a volume of about 500 pages as near as we could because we thought this body would rather have a book of that size.

Dr. Cowden had to go to Hot Springs. I kept firing letter after letter to him, and when they got so hot he couldn't stand it any longer, the secretary wrote and told me that Dr. Cowden was away. Dr. Savage in his last letter to me said he expected Dr. Cowden within the week. That was three or four weeks ago, so we had difficulty in finding out what was going on over here, particularly in regard to the price of the book.

THE SPEAKER PRO TEM: Dr. Wood just gave me the information that the price will be $3.

DR. S. R. MILLER (Knoxville): It cost more than that.

DR. R. B. WOOD (Knoxville): About $4.

DR. S. R. MILLER (Knoxville): Does that include Dr. Hamer's expenses?

THE TREASURER: There was no provision made when the history was authorized, as regards the number of copies to be published or as regards the way of arriving at the cost. That is the one thing that was thrown on the shoulders of the Board of Trustees at the last meeting. We have published 500 finished volumes with an additional 500 in what the printers call the flat, making a total possible output of about 1,000 volumes. I can tell you about the cost of the printing. I never have known about the contract you gentlemen entered into with Dr. Hamer. There have been several hundred dollars of incidental expense in the way of traveling and the acquisition of pictures and things of that kind. The printed volume bound, as it stands now, is going to cost somewhere between $3,400 and $4,000, depending entirely on how much increase in cost the extra seventy pages above the 500 entails and the cost of the added number of cuts that were sent in at the last minute. Even the publisher said he couldn't tell exactly how it would run.

DR. S. R. MILLER (Knoxville): We have done well if we get this within $6, because Dr. Hamer's bill is going to be somewhere around $800 besides traveling expenses. It was my understanding that the Committee would pay his traveling expenses to Washington. He has made four or five trips over here. He made the last trip over here just a week or ten days ago to the printer to make up the index. Then there was Dr. Roberts' expense way back yonder, you know, and other incidental expenses for taking pictures, and things of that kind. I think we will do very well if we get it through for $6 or $7, but I don't think we will ever know definitely until the Treasurer gets in all of the bills. I don't know whether Dr. Hamer has been rendering his bill from time to time or not. If not, he should be paid promptly because he has been put to a lot of expense in traveling back and forth to Washington, and he has worked like a Trojan on it. Many nights he has worked until one and two o'clock on it. If we could have gotten all this information into his hands at the time we gave him the contract, it would have been half as easy on him, and he would have had it to do a long time ago, but he had to wait until the other things were sent in to him before he knew what he had to do in regard to certain things.

He has done the best that he could. We have done the best that we could. We hope you will all like it.

THE SPEAKER PRO TEM: Dr. Sheddan, have you anything to add?

DR. W. K. SHEDDAN (Columbia): Practically nothing except to say it was delayed in getting to the printer through Dr. Cowden. At the last meeting of the Committee I turned it over to Dr. Cowden. He was Secretary of this History Committee. I had some matters that I had gotten up and I asked him what I should do with them, and he said to send them to him. Later I sent in another batch of information that I had gotten hold of. I think the last days of February or the first of March Dr. White wanted to know why I had not furnished certain things. I told him that those matters were sent to Cowden before he left for Hot Springs. I delivered them to his office. I told him if they were not in Dr. Cowden's office I did not know what had become of them. That was the cause of a good deal of this delay, and it interfered very much in getting out the book.

I was very much impressed with Dr. Hamer as a historian. I was very much impressed with his enthusiasm and his work and the vigor with which he went at it. He evidently had a happy knack of getting into data and finding facts that a good many of us would not uncover.

In my own county, Maury County, there were eight members of the original founders of the state organization. I was able to obtain a history of Whittier, his birthplace and the school from which he graduated. One of the original members of this Association was a relative of the Polk family. I could not find a single one of the Polk family who could tell me one thing in the world about him. None of them scarcely knew him. Another was related to another one of the prominent families of our county, the Webster family. I thought I would have no trouble in finding that. I went to the oldest living member of that family and couldn't get one single bit of information.

In digging up the history of the one that I did get I found a lot concerning him that was not in a usable condition. As I say, eight of the original forty-seven members that met and organized the Association were from Maury County, yet I was not able to find anything that was useful or tangible in writing a history except in the case of one.

As I say, a good deal of the delay was the result of Dr. Cowden's going off to Hot Springs and getting worse off. He said to me, "I will only be gone a week." It was three or more weeks after that that Dr. White called me.

DR. E. T. NEWELL (Chattanooga): We have heard a good deal about the book costing $3,500 and Dr. Hamer getting $800, but we have not heard anything about the everlasting debt we owe to Dr. Miller and this Committee of his for the untiring work which they have done. We are doubly indebted to Dr. Miller and have been for years. No one knows what work he has done in medical defense. I have seen Dr. Miller three times in the last year, and every time I have seen him or talked to him, he has been talking about this history of Tennessee and trying to get up the best data he could from all over the state.

I think the least we can do is to extend a rising vote of thanks to Dr. Miller and his Committee for their untiring efforts in connection with this history of Tennessee.

(The motion was regularly seconded by several and the House arose and applauded.)

THE SPEAKER PRO TEM: Gentlemen, I am sure Dr. Miller and his Committee have worked very hard on this large piece of work that we gave them to perform several years ago. I have not had an opportunity to examine the book but it is here before you now.

DR. G. W. MOODY (Shelbyville): I want to endorse what Dr. Newell has said about the work of this Committee. While we appreciate what Dr. Hamer has done, which is a wonderful work, yet we can hardly imagine what Dr. Miller has done. He has been untiring in his efforts to secure data. I think he deserves the most unstinting thanks of this House and I am glad we voted it to him.

THE SPEAKER PRO TEM: Gentlemen, has anyone else anything to say regarding this report.

DR. A. F. RICHARDS: Is it proper that this report be received formally now?

THE SPEAKER PRO TEM: I think so.

DR. A. F. RICHARDS: I want to make a motion that this report of Dr. Miller's be received and, if not spread upon the minutes, special mention should be made of it and published.

I want to subscribe to what has been said about Dr. Miller's vigilance and untiring work in getting up this history. I was in Knoxville recently and I have been in touch with him a number of times. That was all he could talk about. He has devoted his mind and his time and his money to this thing. But for him I think it would not have been a success, anyhow not so great a success.

I want to move that this report be received and acknowledgment made in the minutes.

DR. U. B. BOWDEN (Pelham): I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that this report be received and filed and published in the minutes of this meeting. Are you ready for the question?

All in favor of the motion let it be known by saying "aye"; opposed. It is carried.

Gentlemen, it was my understanding last year that this Committee was authorized to draw on the Treasurer for whatever expense was incurred in this connection. I take it that there is no further action necessary. Dr. Miller, you can draw on the Treasurer for your expenses.

Gentlemen, unless someone else has something to say regarding this particular volume, we will pass on to something else. The next of the Standing Committees is that of the State Tuberculosis Hosiptal Commission, Dr. J. O. Manier of Nashville, Chairman.

DR. J. O. MANIER (Nashville): Mr. Speaker, I think it is worth while, before making this brief report, to rather explain the existence of this Committee.

At the last regular legislative session, as you will remember, there was a bill introduced authorizing the establishment of state hospitals in regional areas which this body at its Jackson meeting went on record as being opposed to. That legislation was proposed by the State Tuberculosis Hospital Commission which is a body of nine or a dozen men appointed by the Governor of the state. After the action of the House of Delegates in opposing their legislation, they requested that a committee from the State Society be appointed to sit in with them in an advisory capacity as regards the future. That is the explanation of our functioning as a committee.

(Dr. J. O. Manier read the report of the Tubeculosis Hospital Committee.)

REPORT OF TUBERCULAR HOSPITAL COMMITTEE

On March 17, 1930, your Committee met with a sub-committee of the Tennessee Tuberculosis Hospital Commission and after a thorough discussion adopted the following recommendations to be transmitted for approval or rejection to the Tennessee Tuberculosis Hospital Commission and the House of Delegates of the State Medical Association.

"1. Your Committee looks with disfavor on any program of hospitalization for the development of either general or tuberculosis hospitals, under which the State government could exert direct control or supervision over the policies or management of hospitals. It believes that provision for the expansion of medical service facilities should be essentially the responsibility of local communities and local governments.

"2. Your Committee wishes to commend the work of the State Department of Health in its program of tuberculosis control through field activities. It recommends that the Legislature be asked to appropriate $100,000 per annum for this purpose, the funds to be used in extension of the work now in progress for—

a. Education,
b. Diagnostic clinics for case finding, and
c. Placement of positive cases under medical care and case follow-up."

At a subsequent meeting of the Tuberculosis Hospital Commission the recommendations of the sub-committee of the Tuberculosis Hospital Commission and of the Tuberculosis Hospital Committee of the Tennessee State Medical Association were adopted by the Tuberculosis Hospital Commission and these recommendations are now brought before this body for its action.

An explanation of the above recommendations of your Committee offers the following facts: (1) That the records of the State Department of Health show a decrease in the last ten years in tuberculosis mortality of thirty per cent in the State of Tennessee. (2) That considering the large number of active cases of pulmonary tuberculosis in the State to make any appreciable impression upon them would require a number of hospital beds which from a financial point of view will always be a economic impossibility for the State to provide. The provision of a relatively small number of beds affording faciilties for a few hundred would care for only a minimum percentage of existing cases and yet entail an annual expenditure of sums of money which in our judgment could be expended along other lines of tuberculosis control much more effectively. If within the last ten years the death rate from tuberculosis has been diminished by thirty per cent in Tennessee it seems fair to expect as much or more continued improvement in tuberculosis mortality in the next decade, if the fundamentals underlying this saving are even more broadly and intensively extended in operation and for this reason your Committee has seen fit to request this body to go on record as requesting that the Legislature be asked to appropriate $100,000 per annum for the purpose of further extending the work now in progress for—

a. Education.
b. Diagnostic clinics for case finding, and
c. Placement of positive cases under medical care and case follow-up."

THE SPEAKER PRO TEM: Gentlemen, Dr. Manier's report is now before you for disposition.

DR. U. B. BOWDEN (Pelham): I move that it be accepted.

DR. J. P. TAYLOR (Wartrace): May I ask Dr. Manier just what he means by the placement of patients under medical care?

THE SPEAKER PRO TEM: He can answer in just a minute. It has been moved that the report be received and filed. Is there a second?

(The motion was regularly seconded by several.)

DR. J. O. MANIER (Nashville): Dr. Taylor, that wording is the wording of the State Board of

Health, by which they mean the continuation of what they have been doing. If they go into your county and hold a clinic of case-finding, of active cases, those cases will then be placed by being referred back to their own physicians.

Mr. Chairman, might I ask this, and I do this for this reason, that the Tennessee State Tuberculosis Hospital Commission, of course, having passed on this thing themselves, were very anxious to know just what our attitude is. Do I understand that the motion that has been made is that this body endorses this report or merely accepts it and files it? I will be asked that question.

DR. U. B. BOWDEN (Pelham): I make a motion that the report be endorsed.

THE SPEAKER PRO TEM: Is there any further discussion? If there is no further discussion, all in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

Gentlemen, that concludes the reports of the Standing Committees in so far as they are present. Dr. Miller was called out of the room on the Auditing Committee and he stated that his Councilors' report is ready. The hour is growing late, but tomorrow we have a very busy session in the scientific assembly. Do you wish to continue this meeting.

DR. W. K. SHEDDAN (Columbia): I move that the House of Delegates adjourn until nine o'clock in the morning.

DR. J. P. TAYLOR (Wartrace): I second the motion.

THE SPEAKER PRO TEM: It has been suggested to me that we hold our meeting a little earlier.

DR. W. K. SHEDDAN (Columbia): Make it eight o'clock then.

THE SPEAKER PRO TEM: The earlier you meet the earlier you will get through.

DR. U. B. BOWDEN (Pelham): I make a motion, in lieu of his motion, that we meet at eight-thirty.

DR. J. P. TAYLOR (Wartrace): I second the motion.

DR. J. C. BROOKS (Chattanooga): I should like to second Dr. Sheddan's suggestion that we meet at eight o'clock.

THE SPEAKER PRO TEM: The motion is before the House to make it eight o'clock. All in favor of the motion will let it be known by saying "aye"; opposed "no." The "ayes" have it and we will meet in the morning at eight o'clock.

(The meeting adjourned at five-thirty o'clock.)

WEDNESDAY MORNING
APRIL 9, 1930

The meeting convened at eight-forty o'clock. Speaker Pro Tem Everett presiding.

THE SPEAKER PRO TEM: Gentlemen, we will ask the Credentials Committee if they have anything new to report.

DR. J. P. TAYLOR (Wartrace): There is a communication from Anderson County certifying to the election of Dr. Hall.

DR. R. B. WOOD (Knoxville): I move he be seated.

(The motion was regularly seconded, was put to a vote and carried.)

THE SPEAKER PRO TEM: Mr. Secretary, owing to your absence yesterday we did not take any official action on the adoption of the minutes, awaiting your return.

THE SECRETARY: Mr. Speaker, the minutes were published in the April issue of the Journal for 1929. They are here. Do you want them read?

DR. W. K. SHEDDAN (Columbia): I move that the minutes be accepted as printed in the Journal, without reading.

DR. R. B. WOOD (Knoxville): I second the motion.

(The motion was put to a vote and carried.)

THE SPEAKER PRO TEM: The next order of business will be the report of the Secretary.

(The Secretary read his report with the following interpolation:

SECRETARY'S REPORT

A report of the activities of the headquarter's office for the calendar year and the fiscal year of 1929 is herewith submitted.

As some of you will remember, the house of Delegates at the meeting in Jackson last year ratified an action taken by the Board of Trustees to the effect that the subscription year of the Journal and the fiscal year of the society were changed so that the membership year, the Journal subscription year and the fiscal year of the society all correspond to the calendar year.

An audit of the books of the office has been prepared covering the calendar year of 1929, and in addition the first quarter of 1930.

Organization

The condition of the organization may be summarized as follows:

1. Number of component societies	69
2. Number of counties organized	86
3. Number of counties unorganized	15
4. Number of members enrolled last year	1606

As has been stated before, a number of doctors who reside and practice in the counties not organized are members of organizations in adjacent counties, leaving a relatively small number of doctors in unorganized counties who are not members. None of these unorganized counties have a sufficient number of doctors to justify a separate organization.

We have continued to make efforts toward combining small counties into larger units. Our experience with these combinations in the past two years have justified the high hope we entertained as to their usefulness and efficiency. I would refer again to the Five County Society as an example. It has had more meetings, more scientific work and more fellowship activities than any small group ever could have had.

Under the constitution and by-laws the headquarters office cannot make combinations except when the counties affected agree to such combinations. We cannot influence the membership of the state association by any means other than that of encouraging doctors of becoming members of component units. Membership in the state society is based entirely on membership in a component society so our effort cannot go further than that of encouraging non-members to petition the proper local unit for membership. We have done this. We have encouraged such combinations as can be effected.

Journal

By authority of the Board of Trustees and the House of Delegates a directory in the Journal has been opened to the membership for use. It was not our intention to put on a sales campaign, but it was our idea that there is a need for such a directory in a state publication; that it will increase the revenue of the Journal to some extent and keep all of its pages allotted to advertising filled.

The abstracting department continues a popular feature.

Every issue had contained the full number of pages and has been mailed on schedule time.

General Activities

The work that is of a general nature has multiplied many times in the last three years. There are many influences at work today that are effecting medical practice. They are creating a great deal of uneasiness in the minds of the practitioners. Many influences are brought to bear on the office from this, that and the other source to influence the attitude of organized medicine. The interviews alone on such matters consume much time.

National and state legislative bodies continually have legislation under consideration that will effect the practice of medicine. It has seemed proper that our office be in touch with all such developments in your interest.

We believe we have held to the fundamental principles that have governed medicine to the best possible advantage in the past. A glance at the figures will show the amount of money that went into charities and endowments last year for medical work. These are mentioned as indications for a strong active militant medical organization governed in its action by sane, sensible conclusions bearing in mind at all times the best interest of the public and the profession. We have adhered to the fundamental principles that *the best public health protection there is today is to be found in a well organized, well governed, well prepared profession governed by the fundamental principles found in the code of ethics.* This applies both to preventive and curative medicine.

A lengthy discussion on these matters was not intended and will not be indulged in.

Finances

A change of the fiscal year, as before mentioned, has brought about a change in the appearance of the books. Heretofore you have been shown an audit as of March 31st, each eyar. On that date the finances of the Association are at their peak due to the fact that a majority of the members have paid dues both regular and defense for the year before March 31st.

The entire expense of operating the organization for the succeeding twelve months was chargeable against the balance shown as of March 31st each year.

The figures I submit now are figures as to the financial resources of the Association at the low point, namely—the end of the fiscal year which is now December 31st.

Our audit shows the following resources as of December 31, 1929:

First Mortgage 6% notes____	$14,500.00
Cash balance in bank________	1,670.01
Making a total of____________	$16,170.01

Of this amount $2,175.03 was credited to the Defense Fund, leaving the Association with actual resources at the end of the year in the amount of $13,994.98.

Receipts and Disbursements

The receipts of the Association for the year from all sources was $15,049.69.

The sources of this income were as follows:

Dues ________________________	$7,040.00
Medical Defense ______________	2,380.00
Advertising __________________	4,647.83
Interest on Investments_______	795.00
Cuts, subscriptions to the Journal, etc. __________________	99.87

(To explain that I will say that the Journal pays half the expense of as many as four cuts accompanying an article. The Journal does not pay all but it has to pay for the setting up. Applause.)

The sale of examination blanks and rosters of membership____$	73.00
Refund of expenses____________	13.99

In the discussion that follows the word "ordinary" refers to funds, (receipts and disbursements) exclusive of the defense fund.

It will be noticed that the three most important sources of ordinary receipts are dues, advertising and interest on investments. These three sources yielded a revenue in the amount of $12,482.83.

Our ordinary expenditures last year increased considerably. Our receipts exceeded the disbursements by $427.98. These increases in expenditure would fall under three heads:

1. Since last year the entire expenses of the delegates to the American Medical Association were paid.

2. The extraordinary expense in preparing for this meeting.

3. An increase in the general activities of the Association.

All of the bills contracted in making preparation for this meeting have not been received. In fact there are contracts entered into between the Historic Committee of which our office has no detailed knowledge. We do know this much, however, that the bills will be heavy. I don't mean to infer that there has been any waste at any point. The work has been done of necessity and involves the expenditure of large sums of money.

I would make this general statement with reference to the ordinary income and the ordinary disbursements of this organization. Our affairs are administered in an economical way.

A complete statement of the receipts and disbursements is found in the Auditor's report which is embodied in the Treasurer's report.

In the last three years the Association has experienced an increase in income over that experienced in the year 1926-1927 by $2,558.25. Our activities have increased. The demands upon the organization have increased and if we expect to maintain our place they must be increased. Our organization is one of the few that carries on activities such as we carry on with membership dues of $4.00 per year. A vast majority of the states have dues of $10.00 per year and upward. Don't misunderstand me now, I am not advocating an increase of dues. I am anticipating our needs and have devised some means by which our increasing financial needs can be met in a logical way without increasing dues. They are as follows:

1. A registration fee of $2.00 per registrant should be charged at each meeting. This fund to go into the treasury of the Association to reimburse in part for money spent in preparation for that meeting.

2. One half of the revenue for commercial exhibits go into the general fund of the Association and the other half into the hands of the local committee on arrangements.

3. A matter already acted upon by you—the creation of a directory department in the Journal.

These three sources of revenue should yield from $2,000.00 to $2,500.00 per year. This revenue would permit a constant increase in activities without involving us in an increase in dues.

I repeat again that our finances are in a satisfactory condition, but our extra heavy expenditures last year, together with a constant increase in the demands on organized medicine, make it necessary that our income be increased.

With reference to a registration fee. Many organizations, even state medical associations, charge a registration fee of from $2.00 to $5.00. This is logical and sound because those who attend receive the greatest benefit from the meeting and should bear an increased proportion of the cost of the meeting.

Doubtless many of you have attended meetings of the College of Surgeons. You will remember the registration fee is $5.00 per year in advance.

With reference to the commercial exhibits. It was brought out in the Conference of Secretary-Editors that in many instances local committees on exhibits permitted unethical houses to exhibit their wares. When the local committees were receiving all the revenue they were tempted to permit such exhibitors on the ground that they needed the money, and further they did not have the information at hand to determine whether the house was ethical or not. It was recommended that the headquarters office should have charge of the exhibit space—should sell it only to ethical exhibitors, collect the revenue and turn one half of it over to the local entertainment committee to be used in whatever way the local committee may see fit. By so doing the headquarters office can handle exhibit space as a part of its commercial advertisement department.

Directory Department

This House acted upon this matter last year and two pages of a directory is now being run. It was not intended that we would put on a sales campaign. It was thought that there is a definite need for such a department of the Journal in which each member who specialized can announce to the profession just what he is doing. He gets value received. There is no reason for giving this service to members because the vast majority of members do not need this service. There are many who do need it and who are willing to pay for it. If this is increased as I believe it will to four or five pages it will yield a nice sum in revenue and keep occupied some advertising pages of the Journal.

To recapitulate these three sources of revenue, plus income on investments, plus income on advertising will yield an income to the Association that is greater in amount than the total dues, thus permitting a constant increase in our activities wihout crippling weaker societies, by increasing the amount of dues each member pays.

As you might logically infer the general duties of the headquarters office have multiplied many times in many ways. I will not discuss these in detail now.

In conclusion I wish to acknowledge the hearty cooperation of officers, committees and members during the past year. I am happy in the belief that a wholesome spirit pervades organized medicine in Tennessee today, and that our outlook for achievements in the next hundred years is bright.

THE SPEAKER PRO TEM: Gentlemen, you have heard the report of the Secretary. It is now before you for disposition.

DR. W. K. SHEDDAN (Columbia): I move you, sir, its acceptance and adoption.

DR. J. P. TAYLOR (Wartrace): I second the motion.

THE SPEAKER PRO TEM: You have heard the motion. Is there any discussion?

DR. E. T. NEWELL (Chattanooga): In regard to the suggestion for increasing the assets of the Association, does the endorsement of this mean that we approve of the registration fee of $2? Do we want to take that up separately?

THE SECRETARY: I believe it would be proper to put it in a separate resolution which I shall propose.

THE SPEAKER PRO TEM: Also the adoption of the exhibit space collection.

DR. E. T. NEWELL (Chattanooga): Yes. It seems to me to be too big a blanket to throw under approval. I think the members of the House of Delegates want to discuss that more in detail.

While I approve heartily of the report as read, I should like to hear from some of the other members in regard to the registration fee of $2 and the disposition of the funds received from the exhibits. Wasn't there a third article, Mr. Secretary, for raising money?

THE SECRETARY: The directory department of the Journal. It has already been approved. I just mentioned the three as a means of raising revenue without increasing dues.

DR. E. T. NEWELL (Chattanooga): While I am on my feet, it seems to me it is quite illogical to take all of the exhibit funds and turn them over. In the Southern Medical Association all of those funds (and it is one of the biggest funds they have to put over the Southern Medical Association meeting) are taken over. If it was not for the exhibit funds they receive they would run behind at every meeting. I see no reason in the world why we should not have half or all. It seems to me the meeting does not come to a local society very often. It is distributed among Memphis, Jackson, Nashville, Knoxville and Chattanooga. The local society ought to be able to take care of the entertainment once in five years, and all of that fund that is gotten could be turned over to the Association.

I don't know whether it would be wise to have a registration fee or not. I should like to hear from some of the other men on that.

DR. R. B. WOOD (Knoxville): I have followed the finances of this Association rather closely for three or four years. While at the present time we are running just about on a level with the expenditures of the Association, the time is not far off when we, at the present rate of income, will show at the end of a year a slight deficit unless means are taken for increasing our revenue.

I do not believe it advisable to increase the dues of individual members in the State Association. We men who come here, who evince enough interest ordinarily in the activities of this Association to become Delegates and sit through meetings here, pay little attention to what money we pay in for State Association dues. We are going to continue in it just the same whether it is $2, $5 or $10, but there are many individuals who I fear would not want to increase their individual membership dues.

There is no one who is going to give us enough money to take care of a deficit. The money must be forthcoming from somewhere. Your directory department will not pay that deficit. Your exhibit space will not pay it altogether, even though we ultimately take all of the money coming in from the advertisements.

I now wish to recommend heartily this recommendation of Dr. Shoulders in regard to taking half of the money from the exhibit space and putting that under the offices of the Secretary because he, handling it from year to year, can certainly get more advertising space and can get better prices than if it is put in the hands of some one individual in a town where the Society happens to be meeting. I do not believe that individuals who attend the State Medical Association will object to paying a registration fee. The fact is I think they ordinarily expect to pay a registration fee because, so far as I know, this Association is the only association that any of the majority of us attend without paying a registration fee. They pay it at the American College of Physicians, and they pay a good sized fee, and it is worth it. A moderate fee of $2 is certainly worth while.

I heartily endorse Dr. Shoulders' recommendation of a registration fee and taking half of the money from the exhibit space, and to encourage as much as possible those men who are specializing in particular branches to avail themselves of the opportunity of advertising their specialty in the Journal.

DR. J. P. TAYLOR (Wartrace): Mr. President, I know the business of the Association cannot be carried on without money. I know that the cost of everything that we have is on the up, but from year to year we have come here, and I think, without an exception, for the last ten years there has been some suggestion made about raising fees and costs.

I think that the charge for exhibit space and for registry in the Journal is all right, but when you come to taxing fellows $2 for registration you are going to cut down your registration, and you are going to keep dozens and dozens of fellows away. The very men here in town who are too busy to attend these sessions except for the reading of one paper are not going to come in here and pay $2 to register. I am personally against that, and I believe every man who considers it rightly is against the proposition of the registration fee. If we have to raise money, let us raise it in some other way. We raised the medical defense fees last year. The county societies are raising their fees. After a while you are going to tax the membership out of existence. You will kill the goose that laid the golden egg. I think that that is not good policy.

DR. E. R. ZEMP (Knoxville): I can't agree with Dr. Taylor at all. The medical profession is getting to be like a bunch of preachers. They expect to get everything for nothing.

We who attend these meetings and keep up with the medical profession and go around to the various sectional meetings certainly get some benefit from those meetings, and certainly a small registration fee is a very small price to pay for it.

I guarantee that the man who stays away from a meeting on account of the $2 registration fee will not come anyhow, because if he does not think he will get that much out of the meeting I would not blame him if he didn't come. The medical profession is facing a crisis, as I said two years ago.

Last year every osteopath and chiropractor in the state of Tennessee was taxed $500 to go into a general fund to protect their profession, and you see where they are today. We have always had an idea that we could get along on sentiment. Sentiment is a beautiful thing, but there is less sentiment in the world today than there ever has been. There is no movement that I know of now that could be put across on sentiment alone, not even the prohibition movement.

In this day and time, if you want things you have to go after them, and when you go after them they are going to cost you something. Any and every man who has the good of his profession at heart and wants to keep abreast of his profession and keep contact with his fellow practitioners is certainly willing to pay a small registration fee. We had the same thing come up in the East Tennessee Medical Association. We had a registration fee of $1, and they said, "You must not do that. You will keep the crowds away."

We raised it to $2 and we have had more registrations on the $2 fee than we had on the $1 fee. Nobody objects to it. The man here in town who just wants to hear one paper is not contributing that $2 to hear the paper. He is contributing the $2 because he knows the profession needs the money and that unless the profession is behind him he is of no value, he can accomplish nothing.

As I say, in this day and time we need concentration of effort. We need harmonizing of efforts, and it takes money to put anything across in this day and time.

I am in favor of raising the income of the Society. I knew nothing about the plan the Secretary had in mind. I do know that everything we undertake now costs money, and it is costing more and more. There is nothing you can run on sentiment alone. If the income is increased in this way the Association will certainly be in a position to do more not only for the Association but for the individual members.

I am heartily in favor of all the items mentioned.

DR. W. K. SHEDDAN (Columbia): Mr. Speaker, I object to certain propositions of Dr. Zemp's. I do not think the Tennessee Medical Association should use the osteopaths or the chiropractors as an example to follow. It takes money to keep them alive and it takes lots of it.

The Tennessee State Medical Association is one hundred years old, and it has weathered through all sort of storms.

In 1887 when I joined this Society its membership was less than 300. The attendance was less than 100. By intelligent, careful methods the Society has grown. I have known time and again a year when there was a deficit the Treasurer or the Secretary would have to meet. It has come up to the place where it is at least self-supporting. There is such a thing in the history of associations as retrenchment. I don't know whether we can retrench any. We will not be able to this year because there will be the history, but there will not be a history of the Tennessee Medical Association written in another 100 years.

But medical organizations have gotten into the habit of going into a good many things that I feel like the late lamented Dr. Bowling, one of the earlier members of this Association, that the less we have to do with them the better off we are.

I am perfectly willing to accept the Secretary's suggestion of the registration fee of $2. This meeting is an enormous meeting. You will not have this many in attendance in another 100 years. I think the Secretary will agree with me that this is an enormous attendance. A registration fee at this time would amount to something. Ordinarily I don't think it will average $500 a year. I don't think it will show an average attendance of 250 members at these meetings for the last ten years. As I said, it will be a small affair in the way of an income. I am perfectly willing to try it, but I will oppose (and I am glad the Secretary does that) the increase in dues. I am heartily in accord with anything in the world to keep from increasing the dues, because I don't care anything about how much you folks in town talk about it, you are going to drive out of organized medicine a lot of its best men.

As I said, if you want to make a registration fee of $2, all right; if you want to make it $5, all right. But when you do that you are going to cut down your attendance and you won't have another 750 members registered in the first day of a meeting in the next 100 years.

The Tennessee State Medical Association cannot copy the Southern Medical Association. It is made up of men from all over the various sections of the Southern States and up in the Northern States if they ever happened to be South. They call them members of the Southern Medical Association.

As I said, the conditions that exist in the Southern Medical Association, in the American Medical Association and in these many, many specal organizations do not apply to a state association. You can't make them applicable. You have to view this thing from every angle. How is it going to affect the fellows in the sticks and how is it going to affect the fellow in the city and which ones are going to bear the brunt? Which ones are you going to drive out?

As I said, I am perfectly willing to try this registration fee. The Secretary has had more opportunity to observe these things than I have, and I am perfectly willing to meet his suggestion.

I think it is time that we began to assume our leadership instead of being a lot of followers. I am sorry Dr. Zemp has not been in the profession as long as I have, because he would know a lot more things about the past. We have conceded; we have given over a good many things in the last fifty years. We have made a great many concessions to cults.

Fifty or sixty years ago the Code of Ethics of the American Medical Association prohibited membership in its organization to any individual practicing any isms or cults. Homeopathy became prevalent. A lot of specialists wanted the privilege of consulting with homeopaths. Eclectics was another ism affair. Now they take them into membership in the various organizations. At that time they were practically all the individuals that were excluded, because the chiropractor, osteopath and things of that kind had not come in.

Every once in a while when I pick up some medical journal I notice they are suggesting a concession to the osteopath, mechanotherapy and revisions of it, physiotherapy and all those things They are conceding to those fellows to get them in as members of the American Medical Association. I am opposed to all those things, very much opposed to them. I will say that as long as the venerable Nathan Smith Davis, the founder of the American Medical Association, could walk on the platform of that Association and open his voice, there never was a concession made to them.

There weren't a dozen specialists in Tennessee fifty-five years ago. There weren't 500 specialists in the United States 100 years ago. One of the greatest men in the profession in this state—

THE SPEAKER PRO TEM (Interrupting): Doctor, stick to the recommendation. We have a lot to attend to here and the time is passing rapidly.

DR. W. K. SHEDDAN (Columbia): That is what I am trying to get to.

THE SPEAKER PRO TEM: Get to the point so we can get through.

DR. W. K. SHEDDAN (Columbia): I am in favor, as I said, of adopting the Secretary's suggestion.

THE SPEAKER PRO TEM: Are you ready for the question? All in favor of adopting the Secretary's report and the suggestions contained therein let it be known by saying "aye"; opposed.

DR. W. K. SHEDDAN (Columbia): I call for a division.

THE SPEAKER PRO TEM: That seems to call for a division. All in favor of the Secretary's report which carries with it the adoption of his recommendation, let it be known by rising, and the Secretary will count. (Twenty.) All opposed to adopting the Secretary's report let it be known by rising. (Ten.) The "ayes" have it and the Secretary's report is adopted.

Have you anything further, Mr. Secretary?

THE SECRETARY: Mr. President, I will make a report for the Committee on Program.

THE SPEAKER PRO TEM: Somebody offered that as the scientific report, unless you have something else.

THE SECRETARY: We just submit. gentlemen, the program as printed and mailed, as the report of the activities of your Committee on Program.

Program

Your Committee on Scientific Work begs leave to report as follows:

We herewith submit a copy of the program for the centennial celebration as evidence of our work.

A meeting of the entire committee was held in Nashville on February 9th for the purpose of considering plans for this meeting.

We have had no precedent to guide us in planning this program. We have the sincere hope that we have come up to your expectation in arranging this meeting.

THE SPEAKER PRO TEM: Gentlemen, we passed over some of the reports of Standing Committees yesterday because the members were not present. The first one of the Committees is the Committee on Memoirs, Dr. Sheddan.

DR. W. K. SHEDDAN (Columbia): Mr. Speaker, as the Chairman of that Committee I did as I tried to do, made my best efforts to get a report. I would write to members of the Association in various towns of the state and they would say, "My county society is acting on that. We passed a resolution and mailed it to the Secretary or to the Journal."

Consequently I have only gotten two. I suppose the Shelby County Medical Society acted on these. They come from Shelby County. I will read them if you desire me to do so, but I see no necessity of continuing this Committee. It is a burden to the Society and it puts somebody to the worry of trying to get a report and then getting the results I have gotten. Tennessee is so well organized, those things come through the local organization.

I would beg, sir, to file the two cases from Shelby County with the Secretary. One of them refers to Dr. Brice W. Fontaine of Memphis, quite a prominent man, and the other refers to Dr. W. T. Posey.

IN MEMORIAM

On August 2nd, 1929, the membership of this society was depleted by the untimely death of Dr. W. T. Posey, who succumbed to a lingering illness of nephritis.

Dr. Posey was born in Nacatish Parish, La., on Jan. 9th, 1883. His earlier educational advantages consisted of the usual public school curriculum through the high school courses. He studied medicine in the University of Tennessee, from which institution he was graduated in the class of 1910. He did postgraduate work at Tulane University in 1917. At the time of his death he was engaged in general practice in Memphis, where by modest demeanor, conscientious discharge of his professional responsibilities and uprightness of character he had endeared himself to a flattering clientelle and to a wide circle of friends. He was identified with the Masonic fraternity and was affiliated with the Cumberland Presbyterian Church.

In Dr. Posey's death a promising career has been cut all too short and a life full of promise of usefulness to others prematurely closed.

This Society hereby records its sorrow at Dr. Posey's removal from its midst; and hereby extends to his bereaved family its profound sympathy.

IN MEMORIAM

With profound sorrow this Society notes the passing of one of its most active, useful and highly esteemed members. On March 31st Dr. Brice W. Fontaine, at the height of a career of usefulness and of brilliant promise, laid down his cares and responsibilities and sank to eternal rest. A vacancy in our ranks occurs which cannot easily be filled. The inspiration of a forceful personality is permanently removed.

Dr. Fontaine was born in Galveston, Texas, fifty-one years ago. His earlier education was secured in the schools of that city and in the university of that state. He was graduated in medicine from the University of Pennsylvania. He began his professional career in his native city, later removing to a location in Madison Parish, La., whence he came finally to and located permanently in Memphis. Subsequently he pursued postgraduate study at Johns Hopkins.

Specializing as an internist Dr. Fontaine rapidly became a prominent figure in his chosen field of endeavor. He surrounded himself with a clientelle of flattering proportions and which was not confined to his immediate surroundings. His advice was sought throughout neighboring states; and his attainments were recognized even at remote distances. A careful and accomplished diagnostician, a conservative therapeutist, he possessed and deserved high esteem by such as availed themselves of his professional advice.

In organized medicine Dr. Fontaine's abilities were recognized by eminent representatives of our profession; and on many occasions and in various ways such recognition was manifest in awarding to him honors which few secure but which all of us covet. As a member of the Memphis and Shelby County Medical Society his activities were never ending; and his initiative and wise counsel were endlessly invoked to the promotion of the interests of this organization. As a member of the various hospital staffs, as a member of the faculty of the Medical Department of the University of Tennessee, in his private practice, indeed in all of his professional activities, Dr. Fontaine ever strove to maintain those standards which make for the elevation and usefulness of the profession to which he belonged and of which he was so able a representative.

In his private life Dr. Fontaine's deportment was marked by conservatism in the formation of his friendships, by an unusual candor and directness of manner and by an unequivocal habit of expressing himself which made of his personality the embodiment of reliability. It could never be said of him that there was ever any doubt as to where he stood about any matter which was the subject of discussion. His was the sort of a personality upon which others leaned mainly because it was dependable. What higher tribute can be paid to a man worth? This society bows in sorrow at his loss; and it extends to his family its profound sympathy in the hour of their bereavement.

DR. SHEDDAN (Columbia): I would suggest that the Committee be abandoned.

THE SPEAKER PRO TEM: Dr. Sheddan's report is now before you for disposition.

DR. E. R. ZEMP (Knoxville): I move it be accepted.

(The motion was regularly seconded, put to a vote and carried.)

DR. E. R. ZEMP (Knoxville): I move that the Committee be abolished.

DR. R. B. WOOD (Knoxville): I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the Committee on Memoirs be abolished. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

The Committee appointed yesterday to check over the Treasurer's report is now ready to report.

DR. S. R. MILLER (Knoxville): "To the House of Delegates: The Auditing Committee has examined the Treasurer's accounts as audited by the certified public accountant and find all in regular and correct form.

"The report includes the indemnity bond of the Treasurer for $10,000 as of March 31 for one year and fire insurance on the office furniture and fixtures for $500."

Will that cover it or should it be $1,000?

THE SECRETARY: I doubt if it quite would. It was taken out three years ago for a five-year period.

DR. S. R. MILLER (Knoxville): Let us leave it to the Treasurer. I thought $500 was rather small for furniture, fixtures and stationery.

"All policies should be continued and premiums paid promptly.

"We have no means of knowing the soundness of the first mortgage investments but such investments are usually of safest character. We believe they are selected with great care and minimum amounts for safety.

"(Signed) S. R. Miller
A. F. Richards
E. T. Newell."

REPORT OF AUDIT FOR YEAR ENDED MARCH 31, 1930

To the Chairman and Board of Trustees,
Tennessee State Medical Association,
Nashville, Tennessee.

Dear Sirs:

Pursuant to engagement, we have made an audit of the Cash Receipts and Disbursements and a partial examination of the Advertising Contracts of the Tennessee State Medical Association for the year ended March 31, 1930. The results of our examination are presented in the accompanying report, together with the Cash Receipts and Disbursements for the first three months of the year 1929, which we have audited previously, on Exhibits and Schedules designated as follows:

Exhibit "A"—Statement of Receipts and Disbursements for the year ended December 31, 1929.

Schedule A-1—Statement of Receipts by months for the year ended December 31, 1929, and for the year ended March 31, 1930.

Schedule A-2—Statement of Medical Defense Fund for the year ended December 31, 1929.

Exhibit "B"—Statement of Receipts and Disbursements for the year ended March 31, 1930.

Schedule B-1—Bank Reconciliation, March 31, 1930.

Schedule B-2—Statement of Medical Defense Fund for the year ended March 31, 1930.

Exhibit "C"—Statement of Medical Journal Receipts and Disbursements for the year ended December 31, 1929.

Exhibit "D"—Statement of Medical Journal Receipts and Disbursements for the year ended March 31, 1930.

Exhibit "E"—Advertising Contracts Receivable as at March 31, 1930.

Comments on Audit

Cash

Cash receipts appearing on the Receipts Register were traced into the depository or accounted for, and reconciliation was effected with the bank's statement. This reconciliation is presented as Schedule B-1 and shows the balance on deposit at the American Trust Company at March 31, 1930, to be $5,906.25.

The disbursements were verified by examination of the cancelled checks as to signatures and endorsements and the amounts of such checks were compared with the entries in the Register, which appeared to be proper, as evidenced by paid invoices on file.

Investments, $14,500.00

The association owned on December 31, 1929, and March 31, 1930, the following 6% First Mortgage Real Estate notes:

No.	Maker	Date	Due	Amount
3911	S. H. Dilliard and wife	6-1-29	6-1-32	$ 2,500.00
5733R	Harry H. Crossfield and wife	8-1-28	8-1-31	2,000.00
5857	T. J. Haile, Jr., and wife	9-1-28	8-1-31	5,000.00
5876	H. P. Murrey and wife	9-1-28	9-1-31	2,500.00
6400	J. H. Horn and wife	6-1-29	6-1-32	2,500.00
	Total			$14,500.00

The above notes are deposited for safekeeping at the American Trust Company, Nashville, Tennessee, where they were inspected by us on April 2, 1930.

Note No. 3911 is a renewal of a similar note, which matured on June 1, 1929. The last note, No. 6400, was purchased in July, 1929.

Receipts and Disbursements

Cash receipts and disbursements for the year ended December 31, 1929, are shown on Exhibit "A". On account of a change in the accounting period from a fiscal year ending March 31st to a calendar year basis ending December 31st, there is presented as Exhibit "B" a statement of receipts and disbursements for the year ended March 31, 1930, for comparative purposes.

The following tabulation shows the increase in funds between the beginning and end of the year ended December 31, 1929:

	General Fund	Medical Defense	Combined
Cash 12-31-29 (Overdraft)___$	(505.02)	$2,175.03	$ 1,670.01
Investments—6% First Mortgage Real Estate Notes, 12-31-29 ____ ______________	14,500.00	_______	14,500.00
Totals—Cash and Investments, 12-31-29 ________	$13,994.98	$2,175.03	$16,170.01
Cash 1-1-29 ________________$	2,041.97	$1,636.15	$ 3,678.12
Investments—6% First Mortgage Real Estate Notes, 1-1-29 ______________________	12,000.00	________	12,000.00
Totals—Cash and Investments 1-1-29 ___________	$14,041.97	$1,636.15	$15,678.12
Increase, or (Decrease) in funds ___________________$	(46.99)	$ 538.88	$ 491.89
Increase or (Decrease) in Funds at 3-31-30 as compared with the amount at 3-31-29			
Cash 3-31-30 ________________$	2,970.53	$2,935.72	$ 5,906.25
Investments—6% First Mortgage Real Estate Notes___	14,500.00	________	14,500.00
Totals—Cash and Investments 3-31-30 ___________	$17,470.53	$2,935.72	$20,406.25
Cash 3-31-29 ________________$	5,286.10	$2,690.00	$ 7,976.10
Investments—6% First Mortgage Real Estate Notes___	12,000.00	________	12,000.00
Totals—Cash and Investments 3-31-29 ___________	$17,286.10	$2,690.00	$19,976.10
Increase or (Decrease) in Funds _____________________$	184.43	$ 245.72	$ 430.15

Advertising Accounts, $780.62

This represents the amount due the association at March 31, 1930, for advertisements in the Journal. The individual accounts making up this total are shown on Exhibit "E". The amounts, past due, are indicated on the Exhibit.

General

The association received a 5% dividend check amounting to $80.13 during the period under review, as partial liquidation of the Medical Defense Fund on deposit at the Peoples Savings Bank, Jackson, Tennessee, at the date of its failure. This check makes a total of $721.22 received to date, representing a 45% liquidation of the entire amount on deposit at the time of the failure.

The fidelity bond of $10,000.00 on the treasurer, Dr. J. O. Manier, was inspected by us. The premium on this bond of $25.00 was unpaid at March 31, 1930.

A fire insurance policy on office furniture and fixtures in the amount of $500.00 was examined. The premium on this policy has been paid to July 20, 1930, when the policy expires.

Tests were made of receipts from members and advertisers and no omissions of entering receipts in the Receipts Register were found.

Salaries paid the members of the Association Staff are:

Dr. H. H. Shoulders, Sec'y-Editor________	$125.00 per month
Dr. W. M. Hardy, Asst. Sec'y-Editor____	200.00 per month
Dr. J. O. Manier, Treasurer______________	100.00 per year
Miss Willard Batey, Bookkeeper___________	125.00 per month

One-half month's salary was due Dr. H. H. Shoulders, in the amount of $62.50, both at December 31, 1929, and March 31, 1930.

Unpaid invoices at March 31, 1930, totaled $610.00. All these invoices were examined by us and were found to be of a current nature and composed of the following:

Creditor	Amount
McQuiddy Printing Co. (Journal Expense) ________	$569.50
Lark Bindery _________________________________ ______	5.00
Central Press Clipping Service_______________________	3.00
McEwen's Laundry ___________________________________	1.00
Gale, Smith & Co. (Premium on Bond of Treasurer)	25.00
Eveready Letter Shop ________________________________	6.50
Total _______________________________________ ______	$610.00

No further liabilities as at March 31, 1930, were disclosed by this investigation.

Respectfully submitted,

GEO. M. SPEARS & COMPANY,
By GEO. M. SPEARS,
Certified Public Accountant.

Nashville, Tenn., April 4, 1930.

EXHIBIT "A"
Statement of Receipts and Disbursements For the Year Ended Dec. 31, 1929.

Receipts:

Dues ________________________________	$ 7,040.00
Medical Defense—Schedule A-2______	2,380.00
Advertising _________________________	4,647.83
Interest on Investments______________	795.00
Cuts, subscriptions, etc.______________	99.87
Examination Blanks and Census______	73.00
Refunds of expenses _______________	13.99
Total ___________________________	$15,049.69

Disbursements:

Medical Defense—Schedule A-2 ______	$ 1,921.25
Medical Journals—	
Printing thirteen issues, December, 1928, to December, 1929, inclusive	4,034.07
Cuts, photographs and extras______	89.00
Supplements, December Issue ______	250.00
Convention Expense, 1929—	
Medical Reporter _________________	356.40
Programs _______________________	137.92
Printing Reports of Officers and Committees ___________________	22.74
Rent of Film ____________________	40.00
Badges _________________________	19.85
Salaries—	
Dr. H. H. Shoulders, Sec'y-Editor__	1,500.00
Dr. W. M. Hardy, Asst. Sec'y-Editor	2,400.00
Miss Willard Batey ______________	1,500.00
Da. J. O. Manier_________________	100.00
Expense Allowance of three Delegates to A. M. A. Convention____________	481.46
Expense of Trustees' Meeting________	90.26
Office Rent _________________________	660.00
Stationery, Printing and Office Supplies ________________________	215.22
Postage ____________________________	111.60
Telephone and Telegrams ___________	70.24
Extra Stenographic and Office Help__	12.50
Auditing ___________________________	50.00
Traveling Expense __________________	170.00
Bond, Dr. Manier, Treasurer________	25.00
Refund of Dues ____________________	34.00
Press Service _______________________	36.00
Miscellaneous _______________________	130.54
Expense of Historical Committee____	163.66
Total ___________________________	$14,621.71
Excess of Ordinary Receipts over Ordinary Disbursements _______________$	427.98

Other Receipts:

5% dividend check as partial liquidation of the Medical Defense Funds on deposit at Peoples Savings Bank, Jackson, Tennessee, at date of failure _______________	80.13
	$ 508.11

Other Disbursements:

Purchase of Horn note	$ 2,500.00	
Accrued Interest	16.22 —	2,516.22

Excess of Total Disbursements over Total Receipts		$ 2,008.11
Represented by:		
Cash in Office and on Deposit at American Trust Co., 1-1-29	$ 3,678.12	
Cash in Office and on Deposit at American Trust Co., 12-31-29	1,670.01	
Decrease in Cash Balance		$ 2,008.11

SCHEDULE A-1

Statement of Receipts by Months For the Year Ended Dec. 31, 1929, and March 31, 1930.

1929	Dues	Medical Defense	Advertising
January	$ 788.00	$ 415.00	$ 286.63
February	1,176.00	418.00	335.43
March	2,980.00	856.00	345.00
April	604.00	193.00	452.15
May	284.00	78.00	336.60
June	252.00	46.00	483.37
July	24.00	10.00	335.75
August	12.00	2.00	368.86
September	24.00	2.00	378.02
October	80.00	18.00	366.47
November	----	----	316.37
December	816.00	422.13	643.14
Totals	$7,040.00	$2,460.13*	$4,647.83†
1930			
January	2,480.00	925.00	410.09
February	1,084.00	311.00	384.82
March	1,508.00	422.00	425.03
Totals for Year Ended 3-31-30	$7,168.00	$2,429.13*	$4,900.67†

1929	Investment Interest	Miscellaneous	Total
January	----	$ 26.63	$ 1,516.26
February	$ 60.00	55.00	2,044.43
March	225.00	6.40	4,412.44
April	----	24.87	1,274.02
May	----	2.60	701.20
June	75.00	2.00	858.37
July	----	19.50	389.25
August	60.00	29.86	472.72
September	225.00	1.00	630.02
October	----	6.00	470.47
November	----	9.00	325.37
December	150.00	4.00	2,035.27
Totals	$ 795.00	$ 186.86§	
Total Receipts for the year ended December 31, 1929			$15,129.82
1930			
January	----	18.60	3,833.69
February	60.00	33.00	1,872.82
March	225.00	18.00	2,598.03
Totals for Year ended 3-31-30	$ 795.00	$ 168.43§	

Total Receipts for the year ended March 31, 1930, the last nine months in the preceding tabulation being included $15,461.23

---

*Includes 5% dividend check amounting to $80.13 received from J. L. Crook as partial payment of funds on deposit at Peoples Savings Bank, Jackson, Tennessee, at the date of failure.

†Includes the amount of $2,644.62 received from the Cooperative Advertising Bureau of the A. M. A. for the year ended 12-31-29 and $2,697.85 for year ended March 31, 1930.

§Receipts from cuts, subscriptions, census, examination blanks and exhibit booths.

SCHEDULE A-2

Statement of Medical Defense Fund for the Year Ended December 31, 1929.

		Total for Year
Receipts:		
From members	$2,380.00	
Dividend of 5% from J. L. Crook, as partial liquidation of funds on deposit at the defunct Peoples Savings Bank, Jackson, Tennessee	80.13	
Total Receipts for the year ended 12-31-29		$2,460.13
Disbursements:		
1-31-29—Cates, Smith, Tate & Long (Case Loy vs. Drs. H. T. & W. C. McClain)	$ 150.00	
1-31-29—Cates, Smith, Tate & Long (Case Mitchell vs. Nash)	100.00	
3-21-29—Edw. Hacker, Court Reporter (Case Mitchell vs. Nash)	146.65	
8-11-29—Edw. Hacker, Court Reporter (Case Mitchell vs. Nash)	175.50	
2-15-29—Adams & Donelson (Case McFarland vs. Simpson)	50.00	
2-15-29—Dr. S. R. Miller, Postage and Clerical Work	9.50	
9-30-29—Dr. S. R. Miller, Postage and Clerical Work	17.60	
2-15-29—Mayfield & Mayfield (Case Forgery vs. McClain)	100.00	
2-16-29—Aust, Cornelius & Wade (Case Carter vs. Cayce, Savage & Caldwell)	75.00	
3-30-29—T. N. Coppedge, Sec'y (refund of dues paid twice)	4.00	
4-22-29—Adams & Donelson (Case Scott vs. Lewis)	50.00	
4-22-29—Adams & Donelson (Case Brunswick vs. Anderson)	50.00	
4-22-29—Adams & Donelson (Case Webster vs. Bailey)	50.00	
4-22-29—Adams & Donelson (Case Lee vs. Campbell & Speed)	75.00	
4-22-29—Adams & Donelson (Case Brooks vs. Howard)	100.00	
5-13-29—Adams & Donelson (Case Tainter vs. Rosamond & McCormick)	250.00	
7- 6-29—Aust, Cornelius & Wade (Case Miller vs. Brew)	200.00	
11-20-29—Aust, Cornelius & Wade (Case Miller vs. Brew)	25.00	
9-30-29—C. E. Pigford (Case Lambeth vs. Goyer)	250.00	
9-30-29—Sarah R. Woodall (Case Lambeth vs. Goyer)	8.00	
9-30-29—Adams & Donelson (Case Tennison vs. Terrill)	25.00	
7-10-29 C. L. Morrison (reprinting Case Roberts vs. West)	10.00	
Total Disbursements for the year ended 12-31-29		$1,921.25
Excess of Receipts over Disbursements		$ 538.88
Represented by:		
Cash on deposit at the American Trust Co., 1-1-29		$1,636.15
*Cash and Investments on deposit at the American Trust Co., 12-31-29		2,175.03
Increase in Medical Defense Fund		$ 538.88

---

*Included in the amount of $1,670.01 cash balance as reflected on Exhibit "A" and also represented by Investments on deposit at American Trust Company for safekeeping.

EXHIBIT "B"

Statement of Receipts and Disbursements For the Year Ended March 31, 1930.

Receipts:

Dues	$ 7,168.00
Medical Defense—Schedule B-2	2,349.00
Advertising	4,900.67
Interest on Investments	795.00
Cuts, Subscriptions, etc.	80.44

Examination Blanks and Census	$ 29.00	
Refunds of Expenses	13.99	
Deposits on Exhibit Booths	45.00	
Total	$15,331.10	

Disbursements:

Medical Defense—Schedule B-2	$ 2,183.41	
Medical Journals—		
Printing twelve issues, March, 1929, to February, 1929, inclusive	3,924.48	
Binding and Reprints	49.00	
Convention Expense, 1929—		
Medical Reporter	356.40	
Programs	137.92	
Rent of Medical Film	40.00	
Printing Reports of Officers and Committees	22.74	
Pre-Convention Expense, 1930—		
Badges	168.47	
Postage, Mailing Programs	95.18	
Preparation of Material	9.50	
Salaries—		
Dr. H. H. Shoulders, Sec'y-Editor	1,500.00	
Dr. W. M. Hardy, Asst. Sec'y-Editor	2,400.00	
Miss Willard Batey	1,500.00	
Dr. J. O. Manier	100.00	
Expense Allowance of three Delegates to A. M. A. Convention	481.46	
Expense of Trustees' Meeting	54.66	
Office Rent	660.00	
Stationery, Printing and Office Supplies	169.07	
Postage	131.60	
Telephone and Telegrams	108.36	
Extra Stenographic and Office Help	186.00	
Auditing	50.00	
Traveling Expense	221.30	
Refund of Dues	22.00	
Press Service	36.00	
Expense of Historical Committee	268.77	
Miscellaneous	138.54	
Total	$15,014.86	
Excess of Ordinary Receipts over Ordinary Disbursements	$ 366.24	

Other Receipts:

5% dividend check as partial liquidation of the Medical Defense Funds on deposit at Peoples Savings Bank, Jackson, Tennessee, at date of failure		80.13
		$ 446.37

Other Disbursements:

Purchase of Horn note	$ 2,500.00	
Accrued Interest	16.22—	$ 2,516.22
Excess of Total Disbursements over Total Receipts		$ 2,069.85

Represented by:

Cash in Office and on deposit at American Trust Company 4-1-29	$ 7,976.10	
Cash in Office and on deposit at American Trust Company 3-31-30	5,906.25	
Decrease in Cash Balance		$ 2,069.85

SCHEDULE B-1

Bank Reconciliation, March 31, 1930

March 31, 1930—			
Balance on deposit in the American Trust Company per Bank's statement			$6,048.81

Deduct Outstanding Checks:

Check No.	Payee	Amount	
11	American College of Surgeons	$ 8.06	
59	Mrs. W. H. Whitsitt	25.00	
60	W. M. Hardy	100.00	
6	Dr. S. R. Miller	9.50—	142.56
March 31, 1930—			
	Balance per books		$5,906.25

SCHEDULE B-2

Statement of Medical Defense Fund for the Year Ended March 31, 1930.

Receipts:

		Total for Year
From members	$2,349.00	
5% dividend from J. L. Crook, as partial liquidation of funds on deposit at the defunct Peoples Savings Bank, Jackson, Tennessee	80.13	
Total receipts for the year ended March 31, 1930		$2 429.13

Disbursements:

4-22-29—Adams & Donelson (Case Scott vs. Lewis)	$ 50.00	
4-22-29—Adams & Donelson (Case Brunswick vs. Anderson)	50.00	
4-22-29—Adams & Donelson (Case Webster vs. Bailey)	50.00	
4-22-29—Adams & Donelson (Case Lee vs. Campbell & Speed)	75.00	
4-22-29—Adams & Donelson (Case Brooks vs. Howard)	100.00	
5-13-29—Adams & Donelson (Case Tainter vs. Rosamond & McCormick)	250.00	
7- 6-29—Aust, Cornelius & Wade (Case Miller vs. Brew)	200.00	
11-20-29—Aust, Cornelius & Wade (Case Miller vs. Brew)	25.00	
8-11-29—Edw. Hacker, Court Reporter (Case Mitchell vs. Nash)	175.50	
1-17-30—Cates, Smith, Tate & Long (Case Mitchell vs. Nash)	175.00	
9-30-29—Dr. S. R. Miller, Postage and Clerical Work	17.60	
1-17-30—Dr. S. R. Miller, Postage and Clerical Work	8.81	
3-31-30—Dr. S. R. Miller, Postage and Clerical Work	9.50	
9-30-29—C. E. Pigford (Case Lambeth vs. Goyer)	250.00	
9-30-29—Sarah R. Woodall (Case Lambeth vs. Goyer)	8.00	
9-30-29—Adams & Donelson (Case Tennison vs. Terrill)	25.00	
7-10-29—C. L. Morrison (reprinting Case Roberts vs. West)	10.00	
1-17-30—Cates, Smith, Tate & Long (Case Lewis vs. Casenburg)	125.00	
1-24-30—Aust, Cornelius & Wade (Case Berry vs. Pollard & Sanders	575.00	
2- 7-30—W. J. Sugg, Sec'y (refund of dues)	2.00	
2-24-30—Jesse C. Hill, Sec'y (refund of dues)	2.00	
Total Disbursements for the year ended March 31, 1930		$2,183.41
Excess of Receipts over Disbursements		$ 245.72
Represented by:		
Cash on deposit at the American Trust Co., 4-1-29		$2,690.00
*Cash on deposit at the American Trust Co., 3-31-30		2,935.72
Increase in Medical Defense Fund		$ 245.72

---

*Included in the amount of $5,906.25 cash balance as reflected on Exhibit "B" and Schedule B-1.

EXHIBIT "C"

Statement of Medical Journal Receipts and Disbursements

For the Year Ended December 31, 1929.

Receipts:		
Advertising	$4,647.83	
Cuts, Subscriptions, etc.	99.87	
Total Receipts		$4,747.70
Disbursements:		
Printing thirteen issues, December, 1928, to December, 1929, inclusive	$4,034.07	
Cuts, photographs and extras	89.00	
Additional Supplements	250.00	
Salary, Secretary (2/3 of Salary Paid)	1,000.00	
Total Disbursements		$5,373.07
Balance, (excess of Disbursements over Receipts)		$ 625.37

EXHIBIT "D"

Statement of Medical Journal Receipts and Disbursements

For the Year Ended March 31, 1930.

Receipts:		
Advertising	$4,900.67	
Cuts, Subscriptions, etc.	80.44	
Total Receipts		$4,981.11
Disbursements:		
Printing 12 issues, March, 1929, to February, 1929, inclusive	$3,924.48	
Binding and Reprints	49.00	
Salary, Secretary (2/3 of Salary Paid)	1,000.00	
Total Disbursements		$4,973.48
Balance (excess of Receipts over Disbursements)		$ 7.63

NOTE: The amounts on these statements are included on Exhibits "A" and "B", respectively.

EXHIBIT "E"

Advertising Accounts Receivable As at March 31, 1930.

Name	*Amount*	
Advertisers obtained by local office:		
The Cincinnati Sanitarium	$ 9.00	
*Howe Water Co.	44.00	
A. J. Majors Co.	18.00	
**Manning Bros., Inc.	99.00	
Joe Morse & Co.	3.25	
*The Officer Sanitorium	32.00	
Physicians' Directory	61.50	
*Saint Albans Sanitorium	92.50	
Dr. Stokes Sanatorium	27.50	
*Waldrop's Pharmacy	60.00	
Watauga Sanitarium	6.50	
Westbrook Sanatorium	15.00—	$468.25
Advertisers obtained through Co-Operative Advertising Bureau of A. M. A.:		
Agnoe's National Physicians' Exchange	$ 1.50	
Appalachian Hall	15.00	
The Atlanta Neurological Hospital, Inc.	5.50	
S. H. Camp & Company	5.50	
General Electric X-ray Corporation	$15.00	
Glenwood Park Sanitarium	1.62	
Haley M. O. Company, Inc.	9.00	
E. J. Hart & Co., Ltd.	3.25	
Hoffman La Roche Chemical Works	15.00	
Hords Sanitarium	9.00	
Hynson, Westcott & Cunning	5.50	
Mead Johnson & Co.	15.00	
Chas. B. Knox Gelatine Co.	15.00	
Lederle Antitoxin Laboratories	5.50	
Eli Lilly & Co.	67.50	
Lister Bros., Inc.	3.25	
Lynnhurst Sanitarium	9.00	
Maltbie Chemical Co.	18.00	
Mellin's Food Co.	9.00	
Merck & Co.	9.00	
Mount Regis Sanatorium	9.00	
The Nonspi Company	5.50	
Parke Davis & Co.	15.00	
Physicians' & Surgeons' Adjusting Association	3.25	
Michael Reese Hospital	11.00	
E. R. Squibb & Sons	15.00	
Katherine L. Storm, M.D.	5.50	
Taylor Instrument Co.	11.00—	$312.37
Total		$780.62

*Amounts past due.

**Represented by promissory note dated 1-24-30 due in sixty days.

THE SPEAKER PRO TEM: Gentlemen, this report is now before you. What will you do with it?

DR. R. B. WOOD (Knoxville): I move its adoption.

DR. E. H. BAIRD (Dyersburg): I second the motion.

THE SECRETARY: Before you adopt it, in supplementing Dr. Miller's statement I will say that the first mortgage lien notes were selected by the American National of Nashville and that bank is in back of them.

THE SPEAKER PRO TEM: Are you ready for the question? All in favor say "aye"; opposed "no." The "ayes" have it.

The next Standing Committee is the Committee on Cancer, Dr. Battle Malone, Chairman.

(Dr. Battle Malone read the report of the Committee on Cancer.)

REPORT OF COMMITTEE ON CANCER

Your Committee has to report that no definite program, either of education or of research, has been attempted in Tennessee during the last year.

It seems doubtful that a specific cause will ever be found for cancer. According to Shearer there is sound reason to believe that cancer is not a pathologic entity, but a physiologic process. If this is true, or unless a specific cure is found, the only hope of lessening the mortality from cancer must lie in teaching both the profession and the people the importance of early diagnosis and treatment.

There is reason to believe that the campaigns which have been carried out by the Society for the Control of Cancer and other agencies have accomplished a great deal of good. A study of statistics in different localities shows that there is a marked diminution in the time between the first observation of the growth by the patient and the time of operation. This applies especially to "accessible" or "visible" lesions. In England there has been an actual decrease in the mortality from cancer of the type just mentioned.

It might be well to mention that Dr. Chevalier Jackson has recently made "invisible" lesions "visible" by the use of his bronchoscope in cancer of the lungs, the esophagus and stomach. He claims the detection of cancer in these regions, in its incipiency, by means of a device that was originally intended only to locate foreign bodies in the air and food passages. Biopsies are performed, radium may be applied, or the more radical operative procedure is done. While we may not subscribe fully to the idea of the early, complete and perfect diagnosis of cancer of the lungs and stomach by the bronchoscope, we do believe that his work along these lines is outstanding and is a real contribution towards advancement in earlier diagnosis in obscure cases.

The following is quoted from a recent letter from the executive Secretary of the American Society for the Control of Cancer:

"There is little to report in the way of progress so far as the treatment of cancer is concerned. The educational activities of our Society have continued as in years past, both among the medical profession and the laity. We are beginning to shift the emphasis of our work from the laity to the medical profession, in accordance with our feeling that better facilities for diagnosis and treatment of cancer must be established before we do much more in the way of urging action on the part of the laity. We are hoping that when the time seems ripe Tennessee will make provision for the establishment of a Cancer Institute."

In connection with the last paragraph it may be stated that there is now a fund of one hundred thousand dollars in Memphis, left as a specific request for cancer work. An effort is being made to combine this with another fund—left for hospital purposes—for the founding of a Cancer Institute. This movement is backed by the Memphis and Shelby County Medical Society— with what success remains to be seen.

We believe, and would recommend, that information on cancer should be brought to the people of every county in the state and that one week in every year should be given to such work. The County Medical Society in collaboration with the County Health Unit could and should carry out such a program.

Respectfully submitted,
Battle Malone, Chairman
E. T. Newell
A. G. Kern.

THE SPEAKER PRO TEM: Gentlemen, this report is before you for disposition. What shall you do with it?

DR. E. R. ZEMP (Knoxville): I move it be received.

DR. R. B. WOOD (Knoxville): I second the motion.

THE SPEAKER PRO TEM: You have heard the motion. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

Gentlemen, there is one other Standing Committee that we did not call for yesterday and that is the report of the Delegates to the American Medical Association. It was published in the Journal but probably Dr. Sheddan would like to make some remarks.

D. L. L. SHEDDAN (Fayetteville): I submit as the report the report published in the Journal of August. Dr. Everett probably has the Journal there. As you have all read it, I don't think it would be advisable to read it in full.

I will just say that at the Portland meeting all three of Tennessee's delegates were present, and they were present at every session of the House of Delegates of the American Medical Association. One can hardly conceive of the immense amount of work and important work which has to be done by the House of Delegates of the American Medical Association. It is important at all times that the Delegates selected from your State Association be there and be present at the meetings; that is going to be especially so at the coming meeting of the American Medical Association in Detroit. There is a question which was referred to the House of Delegates by Dr. Pusey who was here yesterday, and it is to come up for final action at the next meeting in Detroit. That is the question of organizations practicing medicine. It asked for a ruling of the Judicial Council of the American Medical Association to define the ethics or the position whereby organizations can ethically practice medicine.

You know, there are a great many manufacturing concerns, there are a great many schools, there are a great many other things that are organizing medical departments to give free treatment to many of the people or to give it for a very inadequate compensation. This is to be ruled on by the House of Delegates of the American Medical Association.

I dont' think, as I say, it would be worth while to take up the time of this Society in reading this report as it was published in the August Journal of the State Association. Those of you who take the American Medical Association Journal will find in the July and August numbers the transactions of all of the meetings of the House of Delegates and the many activities which they have to engage in.

As my time has expired as a member of the

House of Delegates I would bespeak for you to select some man to take my place who will be sure to be present at the meeting and will do his duty because it is very imortant that our Delegates be there.

Dr. Shoulders referred to the Association paying the total expenses of the members of the House of Delegates. He was not exactly correct about that. The only expenses paid were railroad and Pullman fares. That lacked a good deal of covering hotel bills, meals from here to Portland and things of that kind.

THE SECRETARY: The Secretary apologizes for that error in statement.

DR. E. R. ZEMP (Knoxville): We have Dr. Harris on the program. He is President of the A. M. A. I am going to make a motion that we adjourn until some convenient hour this afternoon.

THE SECRETARY: May I amend that to say this: I approve of the motion, but the suggestion has been made that the Association might adjourn at four this afternoon to attend the funeral of Dr. Savage. I am going to try to jam through the proceedings so as to finish or leave Dr. Witt off so as to give the guests time to finish.

DR. E. R. ZEMP (Knoxville): I believe the House of Delegates should meet this afternoon.

THE SPEAKER PRO TEM: We must have a meeting this afternoon because the By-laws specify that election of Councilors should take place this afternoon.

DR. E. R. ZEMP (Knoxville): I move that we adjourn until four o'clock this afternoon.

THE SPEAKER PRO TEM: Will you just withhold that motion a minute? There is probably a matter of new business to come before the House. If anybody has any new business to introduce at this meeting it will have to be done today, if it is to be acted upon tomorrow. For that reason I should like to give opportunity to anyone who has new business to introduce.

DR. S. R. MILLER (Knoxville): I should like to ask if any arrangements were made to send flowers to Dr. Savage's funeral.

THE SECRETARY: I am sure the local Academy will take care of that. A Committee on Resolutions will report this afternoon, I think, for this Association. It was appointed yesterday. The Association has made no plans, and I have no right to draw money out of the treasury to send flowers, but the local Society will do that.

DR. S. R. MILLER (Knoxville): Don't you think it should be done?

THE SECRETARY: I think it is the pleasure of this House. Ordinarily, of course, it is not done but we make such recognition as we can.

DR. E. R. ZEMP (Knoxville): I think it is unnecessary for us to do that.

DR. E. T. NEWELL (Chattanooga): Mr. President, I have a piece of new business. "An act relating to liens; providing that physicians, nurses and hospitals shall be entitled to liens for their services in certain cases."

I think this is one of the most important things to be brought before this meeting of the House of Delegates. It is something the profession should have had before. The lawyers, undertakers and everybody else have a lien on damages awarded, but the doctor who does all of the work and goes through all the trouble has the major portion of the bag to hold and gets nothing.

(Dr. Newell then read the statement.)

AN ACT relating to liens; providing that physicians, nurses and hospitals shall be entitled to liens for their services in certain cases.

Be It Enacted by the General Assembly of the State of Tennessee.

PHYSICIAN'S LIEN.—Whenever any person shall employ a physician, nurse or hospital to perform professional service or services of any nature, in the treatment of or in connection with an injury and such injured person shall claim damages from the party causing the injury, such physician, nurse or hospital, as the case may be, shall have a lien upon any sum awarded the injured person in judgment or obtained by settlement or compromise on the amount due for the reasonable value of services necessarily performed: Provided, that no such lien shall be valid against any one coming under the Workmen's Compensation Act. In order to prosecute such lien, it shall be necessary for such physician, nurse or hospital to serve a written notice upon the person or corporation from whom damages are claimed that such physican, nurse or hospital claims a lien for such services, and stating therein the amount due and the nature of such services. Provided, however, that whenever an action is pending in court for the recovery of such damages it shall be sufficient to file the notice of such lien in the pending action.

DR. NEWELL: In other words, if an automobile knocks somebody down and breaks his leg or fractures his skull and that patient recovers $5,000 or $10,000 damages, the lawyer gets his one-third. The court gives it to him. If the man is killed, the undertaker gets his part, but the doctor and the hospital who took care of him are at the mercy of the lawyer who may or may not pay a just debt.

I move the adoption of that by this Association.

(The motion was regularly seconded by several.)

THE SPEAKER PRO TEM: You have heard the motion made and the resolution read.

Dr. Newell, would it not be well to include in your motion that this matter be referred to the

Legislative Committee with instructions to vigorously attempt to have it passed?

DR. E. T. NEWELL (Chattanooga): Yes, I will be very glad to do that. The members here should see their legislators and have them get behind this thing. See that they all get behind it and then we will get something that we should have had 100 years ago.

THE SPEAKER PRO TEM: Gentlemen, are you ready for the question?

DR. JOHN P. GRISARD (Winchester): I don't know whether I got the full meaning of Dr. Newell's proposition. It seems to me it is the doctors in the hospital who are taken care of instead of the general practitioners.

THE SPEAKER PRO TEM: Everybody is included.

DR. JOHN P. GRISARD (Winchester): If we made the doctor's claim a preferred claim and put it in the class with that of the lawyer and the undertaker, wouldn't that fit the purpose just the same?

THE SPEAKER PRO TEM: You could hardly do that in a matter of this kind. The preferred claim would only come against an estate and not against the individual. This is attempting to fix a lien on the recovery of any amount of damages that the man might recover.

DR. JOHN P. GRISARD (Winchester): I think it would be good if we did have the doctors in with the undertakers.

THE SPEAKER PRO TEM: That would have to be a separate resolution.

Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The motion is carried.

What time shall we meet this afternoon?

Dr. E. R. ZEMP (Knoxville): I move we adourn until four o'clock.

(The motion was regularly seconded and carried. The meeting adjourned at nine forty-five o'clock.)

Wednesday Afternoon
April 9, 1930

The meeting convened at four-ten o'clock, Speaker Pro Tem Everett presiding.

THE SPEAKER PRO TEM: Gentlemen, the House of Delegates will now come to order.

We have not yet had all of our Standing Committee reports. Is any member of the Hospital Committee ready to report? Dr. Caldwell is Chairman. The other members are Drs. Wood, Baird, Bryan, Jones, Ellett and Jacobs.

DR. R. B. WOOD (Knoxville): I know of no action that has been taken by that Committee. It has had no meeting so far as I know.

THE SPEAKER PRO TEM: Committee on Medical Education, Dr. Joe Gallagher, Dr. L. L. Johnson and Dr. Britt Burns. (Absent.)

The Liaison Committee on Public Health, Dr. McSwain, Dr. Rhea and Dr. John Steel. (Absent.)

THE SECRETARY: The Board of Trustees have not reported. I move that we hear the report of the Board of Trustees now.

THE SPEAKER PRO TEM: We will now hear the report of the Board of Trustees.

DR. J. O. MANIER (Nashville): Mr. Speaker and Gentlemen: This is merely a report of the semi-annual meeting of the Board of Trustees that was held in accordance with the Constitution and By-laws between regular meetings.

(Dr. Manier read the report of the Board of Trustees with the following interpolations:)

REPORT OF THE BOARD OF TRUSTEES ON DEC. 8th, 1929

In accord with the provisions of the Constitution the regular semi-annual meeting of the Board of Trustees was held on December 28th, 1929, in the office of the Tennessee State Medical Association at Nashville. The following members were present: Drs. J. L. Jelks, R. B. Wood, C. M. Cowden and J. O. Manier.

The matter of plans and financing the Centennial Celebration were discussed and by resolution the secretary was authorized to employ at the expense of the general fund of the State Society whatever, additional help and whatever additional members might be needed to cooperate in assembling necessary information and preparing slides for the Tuesday night meeting.

The secretary called attention to the fact that the statement of receipts and disbursements would barely balance for the year 1929, due to an increase in expenditures for various activities despite an increase in income from increased membership and advertising in the Journal. In this connection the expense of the annual meetings, was discussed and two resolutions bearing on this point were passed as follows:

(1) That the Board of Trustees recommend to the House of Delegates for consideration a registration fee of $2.00 for each registrant at the annual meeting—these funds to go into the general Treasury of the Association to help defray the cost of printing and circulating the programs and other expenses incidental to the annual meeting. (Gentlemen, I trust you got the wording of this action. The Board of Trustees went on record as recommending this to you for your consideration as one way that additional revenue could be created.)

(2) That the Board of Trustees recommend to the House of Delegates that fifty per cent of the gross receipts of the exhibit spaces at the State meeting be retained by the State Society and that the remaining fifty per cent be turned over to the host society to be used in defraying the local expenses of the meeting. (In explanation of that, I don't know whether all of you are aware of the

fact, but in the past, up until this time, the local host society has acquired the full returns from the exhibit space. Gradually those returns have grown until now a fifty per cent allotment of that would be equivalent to about seventy-five per cent of what the host society used to get when it got the entire 100 per cent of the allotment.)

The secretary brought before the Board of Trustees for their consideration the following suggested amendments to the Constitution and By-laws: (I don't want you to get the idea that the Board of Trustees is trying to amend the Constitution and By-laws. These were brought up to see whether the Board of Trustees wished, after discussing them, to go on record as recommending them to you for your consideration.)

(1) That the Board of Trustees be increased to consist of six members, two from each Grand Division of the State, to be elected by the House of Delegates, and that the Board of Trustees have the power to name all committees of the Association.

(2) That the Board of Trustees have all the powers of the House of Delegates in the interim between the sessions of the House.

(3) That the councillors be elected by the Delegates from each district in attendance at the annual meeting instead of by the House of Delegates as a whole.

The secretaries reasons for these suggestions were as follows:

The matter of placing the power to appoint committees in the hands of the Board of Trustees instead of the President has several advantages to recommend it. First, the members of the Board of Trustees serve for period of three years. They are familiar with the activities of the various committees. They can maintain a consistent policy as to committee activties. The matter of appointing committees is a task, which often is embarrassing to a President who is unfamiliar with the personnel of the Association and with the respective duties of the several committees.

The Board of Trustees can be called into extraordinary session for the purpose of considering important questions as to policies, legislative and otherwise, when it is impractical to an entire House of Delegates into session.

A President of the State Society is often called upon to make decisions which he cannot make properly without consulting other members of the Society who are authorized to speak for it. It is unfair to ask one member to carry such a burden of responsibility. This should rest on the shoulders of a board who represent each grand division of the State and who are familiar with the various problems that have arisen from time to time and the various actions that have been taken. Such a change in the provisions of the constitution and by-laws is necessary to enable organized medicine to speak and act as a body on many questions that are arising with increasing frequency which deeply affect medicine as a whole. (Those were the recommendations and also the reasons assigned by the Secretary for bringing them before the Board.)

The Board of Trustees, after discussing these recommendations, took no action in even recommending any action by the House of Delegates, feeling that it was not within their province with propriety to suggest to the House of Delegates any legislation that might further increase their already existing powers.

An Executive Committee of the Board of Trustees composed of Drs. Cowden and Manier was appointed to meet at some subsequent date with the Historical Committee to ratify the recommendations of the Historical Committee in reference to the contract with the publisher for getting out the history. This Committee met on February 11th, 1930, and ratified the recommendation of the Historic Committee to the effect that the contract for publishing be awarded to the Methodist Publishing House. The specifications of the contract covered the use of Georgian paper and Interlaken binding, and the printing of 1,000 copies of which 500 were to be bound at a cost of $2,808.93 and the binding of the remaining 500, if called for, at a cost of $365.00 additional—this price to cover cost of cuts, illustrations and an individual carton for each volume.

DR. MANIER: To amplify the expense of the history, the contract that was entered into with the Methodist Publishing House called for a volume of 500 pages and called for a limited number of pages of cuts. We were not given the data by the Historical Committee as to just what number of pages of cuts were to be used. The volume when published went some seventy-five or eighty pages beyond the 500. As to what the additional cost will be to this contract price, I have not been informed. Likewise, the publisher told me yesterday that there would be a material increase in the cost of the cuts from this angle, that in order to make the book presentable and as it was desired, many of these photographs that had to be placed in the book could not be blended in where a cut could be made of the one page and that a cut had to be made of each four, six or eight photographs put on certain of the pages.

So there will be above that contract price the additional cost covering the seventy-five to eighty extra pages in the book and an additional cost in relation to the engravings that were made to formulate the cuts on the pages.

THE SPEAKER PRO TEM: Gentlemen, this report of the Board of Trustees is now before you for disposition.

DR. W. K. SHEDDAN (Columbia): I move that the report of the Board of Trustees be received and that the Speaker direct the Board of Trustees to prepare such changes as they have suggested and present them to the House tomorrow morning for action as to any change in the Constitution and By-laws that will have to lie over for one year.

I suggest that they be appointed to make a draft of such changes as they find advisable and submit them to the House for action tomorrow morning.

DR. U. B. BOWDEN (Pelham): I second the motion.

THE SPEAKER PRO TEM: Gentlemen, the motion has been regularly made and seconded that the report be received and filed with the Secretary and that a committee—

DR. J. O. MANIER (Interrupting): Might I ask a favor of Dr. Sheddan? In regard to the recommendations that were made to this Board by the Secretary, the Secretary had in mind, I know from my knowledge of him, that in his judgment all of those recommendations worked to the best interests of the organization. But, you know, it is very embarrassing to this Board of Trustees (and I know I speak for the rest of the members as well as myself) to appear before this body as recommending amendments to your Constitution and By-laws that do not do a thing in the world except give to the people who are recommending them plenary power.

Frankly, I should like to ask Dr. Sheddan if he would object to letting some other committee go over the recommendations and report back whatever they wish.

DR. W. K. SHEDDAN (Columbia): None in the world.

DR. J. O. MANIER: It is a little bit embarrassing to any body of men to come before this body and recommend something that gives them increased power, and I know I speak for the rest of the Board.

DR. W. K. SHEDDAN (Columbia): I will amend the motion that the Chair appoint a committee of three to go over these suggestions and prepare and bring before the House tomorrow morning the suggestions they make in regard to changes in the Constitution and By-laws.

DR. U. B. BOWDEN (Pelham): I second the motion as amended.

THE SPEAKER PRO TEM: Gentlemen, you have heard the motion that the report be received and filed and that a committee be appointed to draft an amendment to the Consituion in accordance with the recommendations of the Board of Trustees. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

DR. S. R. MILLER (Knoxville): May I say one word in reference to these recommendations. I think the suggestion of the Secretary in regard to the Councilors is good. You will have to alter the Constitution. I was President once when the Constitution and By-laws did not harmonize. The right way to do it would be to have them put it in the form of an amendment to the Constitution and By-laws.

THE SECRETARY: Mr. Chairman, I believe we all appreciate the fact that this meeting furnishes occasions that are disturbing to all of us. I think all of us want to attend the general session. I believe it would be wise, now that the recommendations have been made, to pass over the question of those amendments even this year. I will say they were deliberated on. I know the Board of Trustees are in sympathy with the benefits. At the same time, they just felt an embarrassment in having it appear that they would come forward with a proposition that would increase their power.

My object in so far as I am concerned is this: People logically come to the headquarters office for information as to what is the attitude of medicine. On some of those questions that are presented, medicine has not officially expressed itself. I would not assume to express an official opinion as to what the attitude of medicine would be on a question.

If a group of men such as a Board of Trustees, similar to the American Association's Board of Trustees, could be called together at any time during the year, a representative opinion could be given on any question that might arise. That has occurred with sufficient frequency to me that the persons often come back with irritation, saying, "My goodness, we come to you for an opinion and we can't get it.

DR. S. R. MILLER (Knoxvile): Didn't we last year or the year before authorize the Board of Trustees to outline the policies of the Association in the interim? I think we took some action of that kind, that the Board of Trustees could, on the call of the Secretary, outline the policies.

THE SECRETARY: In reply to Dr. Miller I will say that with all of those amendments that were placed in Chattanooga there was lack of clarity on many points.

I understand that probably the House intended to confer those very powers, but there is a definite question as to whether it was clearly done. Do I answer your question?

DR. MILLER: Yes.

THE SECRETARY: I didn't want to delay the action on the report. I simply wanted to make the statement as to some of the reasons, though it appears to be difficult to do it logically and properly here. A hurriedly gotten up amendment to the Constitution and By-laws might work just as bad as no amendment at all, probably worse.

THE SPEAKER PRO TEM: Is it your idea, Mr. Secretary, to lay this matter over for another year, not even appoint a committee but just let the Board of Trustees bring in the recommendations next year?

THE SECRETARY: Yes.

DR. R. B. WOOD (Knoxville): You will be in the same predicament you are in at the present time. The Board of Trustees do not want to make recommendations.

DR. U. B. BOWDEN (Pelham): I don't think the Board of Trustees want to take that labor on themselves. Appoint a committee at this time to report at the next meeting of the House of Delegates.

THE SPEAKER PRO TEM: I think that is in the motion that Dr. Sheddan made.

DR. U. B. BOWDEN (Pelham): It was to report in the morning.

THE SPEAKER PRO TEM: The only thing they could do would be to submit their recommendations which would lay over for a year because there could be no action taken tomorrow.

DR. R. B. WOOD (Knoxville): Mr. Chairman, if this committee were appointed this afternoon, they could report at tomorrow's session if they thought such amendments were feasible or not, and then the amendments could be introduced to the By-laws, to be voted on next year.

THE SPEAKER PRO TEM: The amendments would have to be introduced not later than tomorrow.

DR. WOOD: They could be prepared to be introduced at tomorrow's session provided the Committee reported favorably.

DR. L. L. SHEDDAN (Fayetteville): Amendments to the By-laws can be offered this afternoon and acted upon tomorrow which will only allow one meeting. Amendments to the Constitution have to lie over for one year. I did not happen to be in the room when this discussion started.

THE SPEAKER PRO TEM: For your information, this directly concerns the Constiution.

DR. L. L. SHEDDAN: If it is a constitutional amendment it has to lie over for a year. If it is an amendment to the By-laws it can be passed upon at one meeting. It could be acted upon tomorrow.

THE SPEAKER PRO TEM: This affects the Board of Trustees and the Councilors which is set out in the Constitution. It cannot be acted upon at this session.

DR. E. R. ZEMP (Knoxville): Even if you appoint that committee this afternoon they could not give that any consideration that would be worthwhile. This is a very important change. I think we would be acting rather hastily, because you know we are going to have a meeting tonight and the committee could not meet, and we meet tomorrow morning. While it would be all right to appoint your committee now, I don't believe they could give you an intelligent report by tomorrow morning.

THE SECRETARY: I don't think we can amend the Constitution and By-laws on either of the recommendations at this meeting. As I say, a hastily prepared amendment would probably be worse than nothing. Therefore, I would move that it be the sense of the House that the Board of Trustees has the powers of the House of Delegates to pass on any question in the interim between the sessions of the House.

THE SPEAKER PRO TEM: Mr. Secretary, we have to dispose of Dr. Sheddan's motion as to the matter of appointing the committee.

DR. W. K. SHEDDAN (Columbia): I should like to ask a question, Mr. Speaker. Has this House of Delegates the right under the Constitution and By-laws to delegate that authority to the Board of Trustees? That is practically a change in your Constitution. Have we the right to delegate our power as a House of Delegates to one particular board or one particular set?

THE SPEAKER PRO TEM: You haven't the power to delegate the power of this body, but the power that we gave the Board of Trustees three years ago does not seem to be sufficiently clear for them to interpret that they are in charge of the affairs of the Association during the interval of the meetings of this House. I take it that a resolution to that effect would be sufficient.

DR. W. K. SHEDDAN: I just wanted to know if you had that authority or that right. If you are going to make a change in these things and this is a question affecting money and might get into the courts, you had better be a little careful that you stick strictly to your written Constitution and By-laws.

DR. E. R. ZEMP (Knoxville): That is why we wanted the committee to have more time.

DR. W. K. SHEDDAN: Then you might just as well put it off for two years.

THE SPEAKER PRO TEM: It will take about that time to pass it.

DR. W. K. SHEDDAN: If you introduce it next year it will have to lay over. I don't see why an intelligent committee of three men (if you take five you will never get them together) can't go over this thing and revise it tonight and tomorrow in time to submit it to the body. If it is the wish of the Association I will withdraw my motion and adopt the suggestion of the Secretary.

THE SPEAKER PRO TEM: Does the second agree to withdraw?

DR. U. B. BOWDEN (Pelham): Yes.

THE SPEAKER PRO TEM: The motion and the second has been withdrawn. There is nothing before the House.

DR. E. H. BAIRD (Dyersburg): I want to ask a question of information of the Secretary as to what is the objection as to the election of Councilors under the present method. I see here very few representatives from my District.

THE SECRETARY: In reply to that I would answer in this way: In the Conference of Secretaries you will note that the American Medical Association has rather promoted an effort to harmonize all activities.

I will take the Ninth District as an example. It is far more logical for the doctors of the Ninth District to elect a man that they know will work in harmony than for this House to elect one for the Ninth District and tell the Nitnh District who their Councilor is. It is just purely that it is done by the group of men in the Ninth District or the Seventh or Eighth Districts.

DR. BAIRD: Is it for the secretaries to do that?

THE SECRETARY: The Delegates are to elect their own Councilors in each District. As far as I am concerned, that is immaterial. That is what the suggestion grew out of.

DR. E. R. ZEMP (Knoxville): You mean the Trustees.

THE SECRETARY: I mean the Councilor in each District is elected by the District instead of by the House.

THE SPEAKER PRO TEM: Gentlemen, the Secretary had a motion that he wished to place immediately upon the withdrawal of the other motion.

Mr. Secretary, make your motion.

THE SECRETARY: I move that it be the sense of the House of Delegates and the interpretation of the House on the action heretofore taken that the Board of Trustees has the power of the House of Delegates during the interim in which the House is not in session.

DR. J. B. WRIGHT (Lynnville): I second the motion.

DR. L. L. SHEDDAN: In discussion of this question that you have just put, it is absolutely necessary that somebody have the power to act in the iterim. Questions are constantly coming up before he Board of Trustees and before the Association that cannot be put off a year. It is their business to act for the Association in the interim without direct instructions as to what they shall do upon any partcular subjects which may come before them.

We try to elect as Trustees men in whom we have absolute confidence in their ethical and business ability to transact the business of the Tennessee State Medical Association. The Secretary can't have this right; the President can't have this right; the Speaker of the House of Delegates can't have this right and nobody else can be delegated except the Board of Trustees. They are responsible to the State Association for their action.

Consequently I am in favor of the motion made by the Secretary that the Board of Trustees be given the power to act in the interim between this meeting and the next meeting on questions of ethical policies. If anything comes up that has to be answered, then a meeting of the Trustees can be called. I am in favor of the motion.

(The question was called for.)

THE SPEAKER PRO TEM: All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

The next order of business, gentlemen, will be the Councilors' reports.

THE SECRETARY: Mr. Chairman, I have just received a communication from Dr. Cowden who is in a hospital bed, which he asked me to read.

THE SPEAKER PRO TEM: I take it, gentlemen, we will have to give way to the Speaker's message, because he has not been able to be with us.

THE SECRETARY: This is a communication from Dr. Cowden. He styles it "The report of the Centennial Historical Committee of the Tennessee State Medical Association."

(The Secretary read the report.)

THE REPORT OF THE CENTENNIAL HISTORICAL COMMITTEE OF THE TENNESSEE STATE MEDICAL ASSOCIATION

Your supplementary committee, appointed at the meeting in Jackson, Tennessee, last year to complete the work of the committee, appointed three years ago to write a history of the Tennessee State Medical Association, for the past one hundred years, submits for your consideration, the following report:

The Committee consists of the following members: Dr. Duncan Eve., Sr., Dr. G. C. Savage, Dr. S. R. Miller, Dr. W. C. Bilbro, Sr., Dr. W. K. Sheddan, and Dr. C. N. Cowden. Dr. Savage was elected chairman of the committee and Dr. Cowden was elected secretary of the committee.

It is with great personal sorrow that we report the death of the chairman of the committee, Dr. G. C. Savage, who was faithful and untiring as head and leader of the committee. As in everything that he did, he gave himself unreservedly to this work and labor of love for the profession; and in this History the Tennessee State Medical Association has a memorial of him, which will be cherished by all.

We began work immediately upon the task, none of us realizing the amount of detailed work it would entail to complete the task. To collect the data from the records of the Association for the past one hundred years, seemed almost an impossibility; but a minute search of the libraries of the state, both private and public and the Surgeon-General's office at Washington, put us in possession of, with one or two exceptions, all of the transactions of the Society from 1830, when it was organized, down to the present. We found in the state archives a copy of the charter of the association granted by the State Legislature, also a copy of the transactions of the first meeting with a complete list of its officers and members.

From this as a starting point we began to collect data and records; and in order to do this, we had to call upon several members of the profession in the different sections of the state. Every one, called upon by the committee, responded with great interest and enthusiasm in the project. The different members, called upon to write special articles upon the advancement that had been made in the past century, put their whole soul into the work; and in these contributed articles can be found the footsteps of the progress that has been made in medicine and surgery in the past century. The state officers also rendered us valuable service in many ways. For this tremendous amount of detailed work that we have rendered to the profession, we assure the Association that the committee considers it one of the greatest privileges of their professional career to have had the opportunity of rendering this service to the profession of Tennessee. No higher privilege could have been granted to anyone.

When it came to the selection of one to edit all of this data in book form, we met with misfortune and fortune. The first man selected, decided after a month's work on it, that he could not spare the time from his other duties to do the work. We then had to start anew, and finally decided that Mr. DeLong Rice of Corinth, Miss., was the man to complete the work. He entered upon his duties wholeheartedly; but at the end of two months lost his life in a gas explosion in his home.

Again, after looking over the field, fortune led us to the University of Tennessee, where we induced Prof. P. M. Hamer, professor of history in the university, to complete the work. As a true historian that he is, he caught the spirit and purpose of the undertaking, and has given himself unreservedly to the task in the limited time, left in which to complete the work. He has performed a most prodigious work in arranging this data; and a work of this kind can not be paid for with dollars and cents; but only through appreciation and gratitude upon the part of the profession can he be recompensed for his services. With his facile pen he has left an imperishable monument that will be an abiding honor to his memory.

The thanks and gratitude of the profession is also due to another one, who rendered invaluable services. When we came to the mechanical part of the work, that of publishing the volume, we realized that none of us knew what we wanted. After the Cokesbury Press had secured the contract, Mr. Pat Beaird offered his services, which we gratefully accepted. He gave his time and talent unstintedly to the book; and as a result we have a volume that is the last word in efficiency and perfection of the printer's art. He deserves a great deal at our hands for his efficient work.

As to the disposal of the volumes, the Committee unanimously recommends that the Society present free of charge to every member of the association a copy of this book. When he receives his copy and reads it, as he will, he will realize that he is a member of this great ongoing profession, it will create within him an enthusiasm and an interest in organized medicine that will abide with him to the end of his life. From the report of our treasurer, you will see that we have ample funds to justify this expenditure, and we do not believe that it could be spent in any other way that would bring greater returns to the profession. At no time in the history of our profession has medical organization been more vital and our future depends largely upon it.

We have a wonderful book upon a wonderful subject that will live and become more valuable as the years come and go, and should be in the hands of every practitioner of medicine in the state. I, therfore, as representative of the committee, make a motion that a copy be furnished to each member of the Tennessee State Medical Association, free of charge.

C. N. COWDEN,
Secretary of Historical Committee,
Tennessee State Medical Association.

April 9th, 1930.

DR. S. R. MILLER (Knoxville): Wouldn't it be a better idea to leave that over until tomorrow and then discuss it?

THE SECRETARY: I think so.

DR. MILLER: I move that we make that a special order of business tomorrow.

THE SECRETARY: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that this report be laid over until tomorrow morning for consideration. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it and it is ordered.

DR. MILLER: I want to make a motion that this House authorize the Secretary and the Treasurer to pay Dr. Hamer's bill. I understand it has not been paid. I asked him for it last night, and he told me he would give it to me this morning but I have not seen him. I move that it be paid when presented and O. K.'d by Dr. Cowden, Dr. Sheddan and myself.

DR. J. O. MANIER: That is not necessary. You had the authority a year ago to go ahead. You have absolute authority.

DR. MILLER: There is one more matter. Whether or not this history shall be presented to each member depends upon the action of the House tomorrow. But I should like to request the House to give three complimentary copies to be sent by the Secretary, autographed that it is complimentary from the Tennessee State Medical Association, one to be sent to Mrs. Savage, one to Mrs. DeLong Rice and one to Dr. Walker, ninety-nine years old, at Rogersville. I want to say that Mr. Rice worked on this nearly two months. He didn't have anything to show. Dr. Sheddan told me to find out what he had done and pay Mrs. Rice but we never could find out.

DR. U. B. BOWDEN (Pelham): I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the Secretary be instructed to forward a complimentary copy to each of the three parties that Dr. Miller mentioned. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it and it is so ordered.

We will now have the report of the Councilor from the Second District, Dr. Miller.

(Dr. S. R. Miller read his report as Councilor of the Second District.)

COUNCILOR REPORT OF SECOND DISTRICT

The ten counties in this district are organized and functioning well, except Jefferson County. Nine of the thirteen members in that county are holding the organization together, but doing very little more.

Scott County did not make any report last year, but this year is 100 per cent organized, and having regular meetings.

There are thirty-six non-member physicians in this district reported as eligible for membership, or twelve per cent of the eligible population. We have gained nineteen new members, eight members have died, and fourteen members have been dropped from the roster of the County Societies. Some of these fourteen will be restored during the year—otherwise it would give us a net loss of three in the District.

Two of our counties have had joint meetings, and I am at this time trying to arrange for joint meetings with several of the others this summer.

We have a total membership of two hundred and sixty-two members, and have had an individual attendance of three thousand and forty-one members in all of the counties at all of the meetings during the year.

Respectfully submitted,
S. R. MILLER, Councilor.

THE SPEAKER PRO TEM: First District, Dr. Fox of Greeneville.

DR. C. P. FOX (Greeneville): I sent in my report to the Secretary about ten days ago. I haven't any copy of it. All the counties reported except one, Unicoi. I had a good deal of difficulty in getting the reports. I sent blanks to four or five of the secretaries and wrote them again and again, and then I called them up on the telephone. I got all the reports except from Unicoi. Dr. Moody told me he would send me the report, but I have not received it.

You all don't know the difficulties about getting reports until you handle the East Tennessee counties. Several times I have had communications from the Secretary with reference to certain men in our District who should belong to our Society. Dr. Hardy sent me a list. I wrote to the secretary and tried to get some information about these men but I never got a reply. To get cooperation on the part of the doctors is one of the hardest things I know of. Secretaries don't pay any attention to your requests.

THE SPEAKER PRO TEM: The Third District, Dr. Fancher.

DR. H. L. FANCHER (Chattanooga): The reports that I got from the secretaries are in the Secretary's hands. I have no definite report. However, I should like to say that it is very difficult to get reports from the county secretaries. Some of the secretaries thought they must make a report up to and including the time of the month previous to our meeting, and others understood that it was for the calendar year.

My district has gone along pretty well. There was some trouble in one county but it has been cleared up. Like Dr. Fox, if I am Councilor again I should like the State Society to furnish me postage because letter after letter to those secretaries does not bring a reply until you can see them in person, not even my own local secretary of Hamilton County.

THE SPEAKER PRO TEM: Fourth District. Dr. J. T. Moore. (Absent.)

Dr. Miller, do you have his report?

DR. S. R. MILLER: No.

THE SPEAKER PRO TEM: Fifth District, Dr. J. P. Taylor.

DR. J. P. TAYLOR (Wartrace): I haven't summarized these reports at all. In fact I am in the same position that the rest of the gentlemen are. I have not been able to get reports from the secretaries. I have reports only from Bedford, Coffee, Rutherford and Lincoln Counties. Cannon, Moore and Marshall have not reported. I don't think it is necessary for me to go over all of this. I will file it with the Secretary.

DR. L. L. SHEDDAN: In regard to Moore County I want to say that at the present time I happen to be living in the adjoining county. There is only one doctor in Moore County. It is not organized. I don't know whether the doctor has a membership in one of the adjoining counties or not. He can have it either in Lincoln or in Bedford or in Franklin or in Marshall. They are all adjoining. I know there cannot be an organization when there is only one doctor in the county.

DR. S. R. MILLER: I should like to say one word to the Councilors present. In my District I get reports from all the secretaries. If I don't hear from them within a week, I send them another letter. If I don't hear from them within a few days, I have a good friend in almost every community and I write to that friend and ask him if he won't see the secretary and help him fill out the report and send it to me promptly. You will get the report if you keep after them in that way. It is wonderful how doctors refuse to answer letters.

THE SPEAKER PRO TEM: The Sixth District, Dr. Howard King. (Absent.)

Seventh District, Dr. B. T. Nolen.

THE SECRETARY: Dr. Nolen did not consolidate his report. These are simply the individual detailed county reports without comment.

THE SPEAKER PRO TEM: Eighth District, Dr. Dancy.

DR. S. R. MILLER: I have Dr. Dancy's report here. He only has four counties reporting, one of these is not complete. He had a gain of seven in one county, three in another, none in another and one in another. He has a net gain of one member in the four counties. That is about all there is to his report. I don't know how many counties are organized in his district.

THE SPEAKER PRO TEM: Ninth District, Dr. Baird.

(Dr. E. H. Baird read his report.)

THE SPEAKER PRO TEM: Tenth District, Dr. W. B. Burns.

DR. S. R. MILLER: I have Dr. Burns' report. (Dr. Miller read Dr. Burns' report.)

THE SPEAKER PRO TEM: That concludes the reports of the Councilors. (Tabulated reports will be found on page 475.

The next order of business will be the election of Councilors from the odd districts, First, Third, Fifth, Seventh and Ninth Districts. Nominations are to be made from the floor. We are now ready for nominations for Councilor of the First District.

DR. L. L. SHEDDAN: I happen to know enough about the First District to know that it would be impossible for the First District to get a man more competent than Dr. C. P. Fox of Greeneville. Consequently I want to nominate Dr. Fox as Councilor for the First District.

THE SECRETARY: I should like to second that nomination, if I may.

DR. W. K. SHEDDAN: I move that nominations be closed and the Secretary be instructed to cast the ballot of the Society for Dr. Fox.

DR. U. B. BOWDEN: I second Dr. Sheddan's motion.

THE SPEAKER PRO TEM: Dr. Fox has been nominated. It has been moved by Dr. W. K. Sheddan and seconded by Dr. Bowden that the nominations be closed. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed. The "ayes" have it.

THE SECRETARY: I assure the House it gives me pleasure to cast the ballot of this entire body for Dr. C. P. Fox as Councilor for the First District.

DR. E. R. ZEMP (Knoxville): I want to call your attention to the fact that there is no such thing as seconding a nomination.

THE SPEAKER PRO TEM: We understand that.

The next order of business is the election of Councilor from the Third District.

DR. L. L. SHEDDAN: I don't think we can improve on the Councilor of the Third District, Dr. Fancher of Chattanooga. I want to place him in nomination for Councilor for the Third District.

THE SPEAKER PRO TEM: Are there any further nominations?

DR. U. B. BOWDEN: I want to make a motion that nominations be closed and the Secretary be instructed to cast the ballot for Dr. Fancher.

DR. W. K. SHEDDAN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that nominations be closed and the Secretary cast the ballot for Dr. Fancher. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

THE SECRETARY: It is with pleasure the Secretary casts the entire ballot of the body for Dr. Fancher as Councilor for the Third District.

THE SPEAKER PRO TEM: Fifth District.

DR. W. F. CANNON (Fayetteville): I nominate Dr. Taylor.

DR. W. K. SHEDDAN: I move that nominations be closed and the Secretary be instructed to cast the ballot for Dr. Taylor.

DR. U. B. BOWDEN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that nominations be closed and the Secretary cast the ballot for Dr. Taylor for Councilor for the Fifth District. All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

THE SECRETARY: It is with pleasure that the Secretary casts the entire ballot for Dr. Taylor as Councilor for the Fifth District.

THE SPEAKER PRO TEM: The Seventh District.

DR. W. K. SHEDDAN: Mr. President, as a representative of the Seventh District I desire to relace in nomination Dr. B. T. Nolen the present Councilor of the Seventh District.

THE SPEAKER PRO TEM: Are there other nominations?

DR. L. L. SHEDDAN: I move that nominations be closed and the Secretary be instructed to cast the unanimous ballot for Dr. B. T. Nolen.

DR. U. B. BOWDEN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the Secretary cast the ballot for Dr. Nolen as Councilor of the Seventh District. All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

THE SECRETARY: It is with pleasure that the Secretary casts the ballot of the body for Dr. B. T. Nolen as Councilor for the Seventh District.

THE SPEAKER PRO TEM: The next will be the Ninth District.

DR. J. D. BREWER: I nominate Dr. Baird.

THE SPEAKER PRO TEM: Are there any other nominations?

DR. BOWDEN: I move that the nominations be closed and that the Secretary be instructed to cast the ballot for Dr. Baird.

DR. L. L. SHEDDAN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that nominations be closed and the Secretary cast the ballot for Dr. Baird. All in favor of the motion let it be known by saying "aye"; opposed "no." The "ayes" have it.

THE SECRETARY: It is with pleasure that the Secretary casts the entire ballot of the body for Dr. E. H. Baird as Councilor for the Ninth District.

DR. S. R. MILLER: Mr. Chairman, I want to say that the delegates go back and tell their secretaries that we are going to want their reports in January next year. We can get them for the calendar year now. It is going to simplify our work. I am going to get out questionnaires that will be a little different than this one. We will send them to the different Councilors so they will have more time to work this up. Bear in mind that the Councilor year is the same as the calendar year and the same as the Association year.

THE SPEAKER PRO TEM: Gentlemen, this is the last meeting at which any new business may be brought before the House of Delegates which is required to lay over for one day. If any member has anything to offer now is the time to present it.

DR. J. W. DANLEY (Lawrenceburg): There was a matter that came up in our Five County Association, and as I was a Delegate they requested me to bring the matter before this body. It is in regard to Hickman County joining our association. They felt they would like to have a Delegate, but according to my understanding we are only allowed one Delegate for each fifty members or portion thereof. My instruction to them was that they could not come in with us and retain their Delegate. So they asked me to bring it before the House and see if there is any way by which they could have a representative by the fifty route. I just bring it before you because they asked me to.

THE SPEAKER PRO TEM: How many members in the entire District?

DR. DANLEY: Only thirty-some-odd, I believe, in the Five-County and four or five in Hickman County.

THE SPEAKER PRO TEM: If they have one charter they will only be entitled to one Delegate from the entire District. There will be no way in which you can change it without giving all other counties similar representation, and I doubt the advisability of doing that.

DR. E. H. BAIRD: Mr. Chairman, as Councilor from the Ninth District, that same question came up. I will tell you how I solved it over there and I think it is the way for this gentleman to solve it. Form your bodies together in your association for scientific purposes only and then leave them their representation. I don't think it is fair and right to take representations away from your county. I figure on combining another county into the association there. We all know that you cannot have a medical society meeting with eight or ten members. You are not going to have a good society meeting. You can combine your counties for scientific purposes the same as we do. We have thirty or thirty-five doctors present. You can have three, four or five members on the program. Have out-of-town men every time.

We have good society meetings. You can have the vice-president elected from each county and have a secretary. Don't let them surrender their charter. You can have representation in your State Society. That is the way I solved that question in my District.

THE SECRETARY: I should like to say that three years ago in an effort to increase the organization, this matter of organizing counties into bigger units, as happened in the Five-County, three of which had never been organized before, was promoted. We encountered that very difficulty of counties that had a charter, even though they had not met for three years, held on to it on account of the representation in the House of

Delegates. That was all right. Then came the proposition of combining for scientific purposes. Dr. Baird and others have carried that out. That works all right. They go along and elect the representatives, but through a conference of the membership they can work out programs, dates of meetings, procedures, officers and so forth, from a local standpoint.

For that reason a communication was sent to the Councilors for the purpose of holding a meeting in each District last year. That didn't get very far. In some of the cases it did not seem to work out very well because it would not be universally effective. I can heartily endorse Dr. Baird's statement as to the effectiveness of that method. I know he is right.

THE SPEAKER PRO TEM: Does anyone else have anything to offer under new business?

Have you anything else to bring before this meeting?

THE SECRETARY: No.

THE SPEAKER PRO TEM: What time shall we meet tomorrow morning?

DR. J. W. DANLEY: I move that we meet at nine o'clock.

DR. U. B. BOWDEN: I second the motion.

(The motion was put to a vote and carried. The meeting adjourned at five-twenty o'clock.)

HOUSE OF DELEGATES
THURSDAY MORNING, APRIL 10, 1930

The meeting convened at nine-fifteen o'clock, Speaker Pro Tem Everett presiding.

THE SPEAKER PRO TEM: Gentlemen, let us come to order. If there is anyone here who has not been regularly seated as a Delegate, I wish he would come forward and present credentials to the Credentials Committee.

We will ask the Secretary to call the roll of the Delegates. (The Secretary called the roll.)

THE SECRETARY: That completes the roll call, Mr. Speaker.

THE SPEAKER PRO TEM: Is there any Delegate present whose name was not called?

THE SECRETARY: I will call your attention to the fact that under the Constitution and By-laws officers and ex-Presidents are members of the House. I don't know who of those are present.

THE SPEAKER PRO TEM: The By-laws provide that the report of the Nominating Committee and election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the third day of the general session. It has been customary that we dispense with the reading of the minutes because they have not been transcribed.

THE SECRETARY: I move that the reading of the minutes be dispensed with.

DR. U. B. BOWDEN: I second the motion.

THE SPEAKER PRO TEM: It has been moved and seconded that the reading of the minutes be dispensed with. Those in favor say "aye"; opposed "no". The "ayes" have it.

We are now ready to receive the Nominating Committee's report. The Nominating Committee will bring in their nominations but this does not prevent nominations from the floor. The By-laws so specify and it is my duty to state that before the Committee reports.

We should like to have the Nominating Committee bring in their report for the office of President.

DR. W. K. SHEDDAN: Mr. Speaker and Members of the House of Delegates: The Nominating Committee begs leave to submit the following report for President:

J. B. McElroy, Memphis;
James W. McClaran, Jackson;
Harris Collier, McKenzie.

THE SPEAKER PRO TEM: You will prepare your ballots for these gentlemen whose names have been read out.

I will appoint on the Teller Committee the following: W. L. Williamson, Shelby; R. H. Newman, Knox; A. F. Richards.

You will prepare your ballots and the tellers will wait on you. All regular Delegates, ex-Presidents and Councilors are entitled to a vote.

(Ballots were cast and counted.)

THE SPEAKER PRO TEM: The Secretary will now announce the result of the ballots.

THE SECRETARY: The ballot shows 32 votes for McElroy and 24 votes for McClaran.

THE SPEAKER PRO TEM: Gentlemen, by your ballot, you have elected Dr. J. B. McElroy your President for the next year, and I so declare him elected by your ballot.

The next will be the report of the Nominating Committee for Vice-Presidents, one from each grand division of the state.

DR. W. K. SHEDDAN: The Nominating Committee begs leave to submit the name of Dr. George R. McSwain of Paris as Vice-President for West Tennessee, and in the event of the disability or death of Dr. McElroy, I believe the Constitution provides that he will be the presiding officer.

THE SPEAKER PRO TEM: Mr. Chairman, have you checked your list to see that none of these Vice-Presidents are members of the House of Delegates?

DR. W. K. SHEDDAN: Yes.

THE SPEAKER PRO TEM: Gentlemen, Dr. McSwain has been nominated for Vice-President of West Tennessee. Are there any other nominations from West Tennessee?

DR. W. K. SHEDDAN: I move that the report of the Nominating Committee be accepted and the Secretary be instructed to cast the ballot of the House of Delegates for Dr. McSwain.

(The motion was regularly seconded.)

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations be closed and the Secretary cast the ballot for Dr. McSwain for Vice-President from West Tennessee. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: It gives me pleasure to cast the entire ballot of the body for Dr. George R. McSwain of Paris for Vice-President of West Tennessee.

DR. W. K. SHEDDAN: Your Committee reports as candidate for Vice-President of the Middle Tennessee the name of Dr. George C. Williamson, of Columbia.

THE SPEAKER PRO TEM: You have heard the nomination. Are there any other nominations?

DR. R. H. NEWMAN (Knoxville): I move that nominations be closed and the Secretary be instructed to cast the ballot of the House for Dr. Williamson.

(The motion was regularly seconded.)

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations be closed and the Secretary cast the ballot of this body for Dr. George C. Williamson as Vice-President of Middle Tennessee. All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: The Secretary casts the entire ballot of the body for Dr. George Williamson of Columbia for the office of Vice-President of Middle Tennessee.

DR. W. K. SHEDDAN: The Committee begs leave to report the name of Dr. James L. Bibb of Chattanooga as candidate for Vice-President from East Tennessee.

THE SPEAKER PRO TEM: You have heard the nomination. Are there any other nominations?

DR. E. R. ZEMP (Knoxville): I move that nominations be closed and the Secretary cast the entire ballot for Dr. James L. Bibb as Vice-President of East Tennessee.

(The motion was regularly seconded.)

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations be closed and the Secretary cast the ballot for Dr. Bibb of East Tennessee. All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: It is with pleasure that the Secretary casts the ballot of the entire body for Dr. J. L. Bibb of Chattanooga for Vice-President of East Tennessee.

DR. W. K. SHEDDAN: The Nominating Committee begs leave to report the name of Dr. E. G. Wood of Knoxville as Delegate to the A. M. A. for East Tennessee for a three-year term.

THE SPEAKER PRO TEM: You have heard the nomination. Are there any other nominations?

DR. HIRAM LAWS (Chattanooga): I want to nominate Dr. J. C. Brooks of Chattanooga.

THE SPEAKER PRO TEM: Are there any other nominations? Since we have two candidates nominated for this place you will prepare your ballots for Dr. Wood and Dr. Brooks for Delegate for a three-year term to the American Medical Association, representing this body from East Tennessee. The tellers will kindly take up the ballots.

DR. J. C. BROOKS (Chattanooga): Mr. Chairman, I should like to have Dr. Laws withdraw my name because I was on the Nominating Committee from East Tennessee. I nominated Dr. Wood. I really would like to have Dr. Laws withdraw my name.

THE SPEAKER PRO TEM: Dr. Laws, you have heard the Doctor's request. What is your pleasure?

DR. LAWS: Hasn't it gone to a vote?

THE SPEAKER PRO TEM: The votes have not been taken up. They have been called for.

DR. A. F. RICHARDS: A lot of them have been collected.

THE SPEAKER PRO TEM: Gentlemen, the Secretary will announce the result of the ballot.

THE SECRETARY: Mr. President, the result of the ballot shows 37 votes cast for Dr. Wood and 19 votes for Dr. Brooks.

DR. J. C. BROOKS: I should like to make a motion that we make this unanimous for Dr. Wood.

DR. B. L. JACOBS (Chattanooga): I second the motion.

THE SPEAKER PRO TEM: It has been moved and seconded that this be made unanimous for Dr. Wood. All in favor say "aye"; opposed "no". The "ayes" have it.

DR. W. K. SHEDDAN: Your Committee, on Nominations begs to report the name as Alternate to the A. M. A., Dr. Ed Newell of Chattanooga.

THE SPEAKER PRO TEM: You have heard the nomination. Is there any other nomination?

DR. E. R. ZEMP: I move the nominations be closed and the Secretary cast the ballot.

DR. HALL: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations be closed and the Secretary cast the ballot for Dr. Newell as Alternate to the American Medical Association from East Tennessee. All in favor say "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: It gives the Secretary pleasure to cast the ballot of the entire House for Dr. Ed T. Newell as Alternate-Delegate to the American Medical Association.

DR. W. K. SHEDDAN: Your Committee on Nominations begs to report as Trustee of the Association the name of Dr. R. B. Wood of Knoxville.

THE SPEAKER PRO TEM: Gentlemen, you have heard the nomination. Is there any other nomination?

DR. TOM R. BARRY (Knoxville): I move the nominations be closed and the Secretary be instructed to cast the ballot.

DR. W. K. SHEDDAN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that nominations be closed and the Secretary cast the ballot for Dr. Wood. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: The Secretary takes pleasure in casting the ballot of the House for Dr. R. B. Wood of Knoxville as member of the Board of Trustees.

THE SPEAKER PRO TEM: That is for a term of three years.

DR. W. K. SHEDDAN: Your Committee on Nominations begs to report the name of H. H. Shoulders as Secretary for the ensuing twelve months.

DR. A. G. NICHOL (Nashville): I move the nominations be closed.

DR. W. K. SHEDDAN: I second the motion and I would add that the President cast the ballot of the House for Dr. Shoulders.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations be closed and the Chair cast the ballot for Dr. H. H. Shoulders for Secretary-Editor of the Journal for the ensuing year. All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

I take pleasure in casting the ballot of the organization for you as Secretary for another year.

DR. W. K. SHEDDAN: Your Committee on Nominations begs to report as Speaker of the House of Delegates the name of Dr. E. R. Zemp of Knoxville.

THE SPEAKER PRO TEM: You have heard the motion. Are there any other nominations?

DR. L. L. SHEDDAN: I move the nominations be closed.

DR. TOM R. BARRY (Knoxville): I second the motion.

THE SPEAKER PRO TEM: You have heard the motion. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SPEAKER PRO TEM: The next order of business will be the place of meeting for next year.

DR. W. K. SHEDDAN: Your Committee on Nominations suggests Knoxville, Tennessee, as the next place of meeting.

THE SPEAKER PRO TEM: Gentlemen, are there any other suggestions?

DR. W. K. SHEDDAN: I move that nominations be closed and that Knoxville be selected as the next place of meeting.

DR. R. L. JONES (Nashville): I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that the nominations for place of meeting for next year be closed and the Secretary cast the ballot in favor of Knoxville. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

THE SECRETARY: The Secretary casts the ballot of the body for the city of Knoxville as the meeting place for next year.

DR. W. K. SHEDDAN: The report is respectfully submitted by your Committee on Nominations, W. K. Sheddan, Chairman, and J. D. Brewer, Secretary.

THE SPEAKER PRO TEM: Acording to the By-laws these officers are to take their places after this meeting; the present officers finish up this session. I see Dr. Zemp in the room, and I shall ask him to come forward and sit with us at the table until we are finished. Then we will entertain speeches from him and the Secretary.

Gentlemen, there was a matter set as a special order of business this morning, Dr. Cowden's message which was received yesterday afternoon. Shall we read that portion of the message that pertains to this morning's session or read the entire communication. It is composed of about three pages.

The Secretary will read that portion of his communication that he requested us to put before the House.

THE SECRETARY: The last part of the communication sets out the suggestion made by the Committee on Medical History in regard to disposal of the volume:

"The Committee unanimously recommends that the Society present free of charge to every member of the association a copy of this book. When he receives his copy and reads it, as he will, he will realize that he is a member of this great ongoing profession: it will create within him an enthusiasm and an interest in organized medicine that will abide with him to the end of his life. From the report of our Treasurer, you will see that we have ample funds to justify this expenditure, and we do not believe that it could be spent in any other way that would bring greater returns to the profession. At no time in the history of our profession has medical organization been more vital, and our future depends largely upon it.

"We have a wonderful book upon a wonderful subject that will live and become more valuable as the years come and go, and should be in the hands of every practitioner of medicine in the state. I, therefore, as representative of the Committee, make a motion that a copy be furnished to each member of the Tennessee State Medical Association, free of charge."

DR. J. W. REED (Belfast): I want to second that motion.

THE SPEAKER PRO TEM: For your information I will rule that Dr. Cowden not being present, he cannot make a motion. The Chair will entertain a motion from the floor.

DR. W. J. REED (Belfast): I move that we accept the entire communication as Dr. Cowden has requested.

DR. E. R. ZEMP: I second the motion that we accept the communication and spread it on the minutes.

THE SPEAKER PRO TEM: I think your motion would only carry with it the acceptance of the communication and spreading it on the minutes.

You have heard the motion that this communication be received and filed and spread on the minutes. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

The matter of disposing of the other question set out in the communication is now before you.

DR. R. M. LITTLE (Martin): I move that this matter is not in order. A great many of the members have already bought and paid for their volumes. Every man as a member of his Society is willing and able to pay for a volume. As it has been suggested that the finances of the Association are at a low ebb and the expense of getting up this volume has been great, I move that every member be asked to buy his own volume.

DR. U. B. BOWDEN (Pelham): I want to second the Doctor's motion.

In seconding the motion I want to say that if this Association pays for those books, there will be lots of them sent to men who contribute absolutely nothing to their home Society or state Society and will not appreciate the volume as a gift.

DR. J. W. REED (Belfast): Mr. President, I am not speaking for myself, but I am speaking for him who is unable to speak. He said he did wish that he had the strength to come here and present this to the Society. I told him, as that communication lay on his bed, at his side, "I will present it, but I can't tell you what they will do with it."

I have already bought my book. But, gentlemen, he said, "We have the money to pay for this book. What are you going to do with it. We are not a pauper institution. We have $16,000 that somebody is going to spend. We can spend the interest of it. What are you going to spend it for?"

That is his idea. The Committee knows his stand. I don't know anything about the Committee, but the Committee knows the Doctor's stand. That is why I am before you. I want to explain my position.

The doctor said, "We have the money, and every man ought to have the book, and it will be read. We can print 2,000 copies at almost the expense we are printing 500. If every man is given a copy he will take it home and look it over. If they have to buy it, not more than 500 will buy, and the rest of the volumes will be left on shelves somewhere for the dust to cover them up."

THE SPEAKER PRO TEM: Dr. Manier has the floor. He is the Treasurer of this organization, and he is in position to give us some information regarding that. I will just state, gentlemen, that even though we have a little money on hand, any organization that is not putting something aside in reserve is a losing proposition. I think that we should guard with care whatever reserve we have.

DR. J. O. MANIER: Mr. Speaker, I think that, not only before action is taken on a matter of this kind entailing an expenditure of money, but even before one comes to any conclusion as to what he would wish to do, it is right and proper that you should have a sane perspective of just what the finances of the Association are.

Probably one of the most deceptive things in the world is to look at an audit which does not show you anything except the fact that the books are pretty largely in balance.

Here, in brief, is the financial status of your Association: As of March 31, 1930 (that is this year), the Association had in permanent investment, that is in 6 per cent first mortgage bonds, $14,500. At that time, on March 31, there was cash in bank of $6,000. To look at that in that sense makes you feel that you have assets of $20,000.

Let me get these few facts into your mind as regards what really will be the assets of this Society. In the first place, against that $6,000 in cash there are outstanding bills for the month of March and incident to this meeting of somewhere between $1,500 and $1,800, which will cut that $6,000 down to $4,200 or $4,500.

You must remember that the major part of your income for your annual operating year, which runs from January 1 to December 31, accrues from the $4 dues that the membership of this Society pays in. On the thirty-first day of March, 1930, there were 1,520-odd paid-up memberships in this Society. We never had a paid-up membership in any year of more than 1,615 to 1,620. Consequently, so far as assets to be collected for the remaining nine months of this year, you can't hope to collect the $4 dues from more than an additional 100 men. So we are now faced with this problem: We have our fiscal year with nine months to run, with $500, at the most, of income coming in for the expenses that will accrue in the next nine months.

Roughly speaking, the per monthly expense of this body runs close to $900 a month. That is including salaries, office expense and the expense of the Journal. The Journal does not quite pay for itself. I think I am correct in that. There is a small deficit. But take out, if you wish, for the sake of argument, the expense of the Journal, and to give you some figures to work on which run from $300 to $350 a month, remove that from the $900 and that leaves you with a monthly deficit of around $500 or $550. Multiply that by nine and you are going to check out between $5,000 and $6,000 between now and the first of January, with no assets coming in to meet that, beyond the $500.

You had an actual net asset in bank on the thirty-first day of March of not over $4,500. Add your $500 to it and you won't have but $5,000. The $5,500 to $7,000 that will have to be spent from now until January is going to create a deficit on operating expense of around $2,000.

No matter what you do about this history, whether you give it away or whether you sell it, there is going to be created a variable loss on that history ranging anywhere from as low as $2,500 to $3,000, if you sell it; up to as high as $6,000 or more if you give it away. If you give it away, with the loss that this Society will have attained in a year of $2,000 to $3,000 in operating expense plus the $6,000 loss on your history, you will have decreased your assets by around $9,000.

You must remember this fact when anyone says that we have a lot of money and asks what other purpose could we spend it for. I don't think myself that this body particularly desires or should desire to accumulate an enormous surplus, yet out of these $14,500 first mortgage bonds bearing 6 per cent interest has come an income to this Society every year of $800 which has been the major reason that you have been able to operate within your present dues. Certainly, as Dr. Everett said, no society or nobody can be economically sound unless it operates within its budget and creates a certain amount of surplus every year.

To me personally, as Treasurer, I would just as soon be Treasurer of a $6,000 fund as a $14,000 fund. It does not make any difference to me, but I think you should bear in mind if you decrease your standing surplus, you are going to be faced in a short time, a number of years, with the problem of probably having to increase your dues, which would be one of the most tragic things that could happen to this organization unless it became an absolutely unavoidable necessity. Those are the figures. If you don't understand them, I shall be glad to try to answer any questions. I did feel that this body should know the facts in the situation before they spend money. To me it is a rather unsound economic principle.

With the rapid changes occurring in all types of things, we don't know what we might need that money for in the way of protection and other things. Personally, I think it is a mighty foolish thing to dissipate the resources. If there are any questions you don't understand about the finances I shall be glad to answer them. (Applause).

DR. W. D. HAGGARD (Nashville): Mr. President and Gentlemen: There is just one matter I wanted to bring to your attention in regard to this and that is these volumes are costing over $5 each. When we sell them to ourselves at $3 we are practically giving a sum equal to practically half of it. That is going to be a drain on the treasury.

Another thing is that whatever we get for nothing is of no account to us, we don't appreciate it. Whatever we buy, we cherish. There is no use in sending this broadcast to men who won't buy; they won't read it; it is valueless to them. You are penny wise and pound foolish. You have thrown your money away in your so-called philanthropic effort. As a matter of fact, a great many men will buy this volume. Because we have a few thousand dollars in the treasury, do not think that we must dissipate it. You know, we are nothing but grown-up boys, and money in the pocket always did burn a hole in the pocket. Anyone who is familiar with a society that has any money in the treasury knows that it is always a bone of contention. Anybody can spend it but it takes an awfully wise man to keep it. Societies should be like individuals. I don't think anybody who has a bond should ever sell it. My information is that some men did sell bonds and trade them for stock last autumn, and they wish to God they had the bonds back. (Laughter.)

Gentlemen, let us be just before we are generous. We are giving half of these volumes gratuitously, and $3 is child's play for a magnificent book like this. You can hardly get a textbook or a manual for $3. Let us be consistent, wise and judicious, frugal and, at the same time, economic. We don't know when we will have use for this little sum of money.

My dear fellows, the osteopaths have enormous sums of money laid up. It is not going to profit them any. But there are so many wonderful problems that this Association could spend this money on a little later.

My plea to you today as a long-time member of this Association and the most distinguished Secretary it has ever had, with the present exception—we used to have such a small number of members when I was Secretary that I knew everybody's initials, name and where he lived. They didn't have any rural routes in those days. We knew whether a fellow lived at Williamsport, Bigville, Strawberry Plains or Sweet Lips. (Laughter and applause.)

DR. W. K. SHEDDAN: I see here from the program that I am the only member of this Historical Committee on the floor and only one of the two who has been at this meeting. I begged Dr. Miller yesterday to stay over.

I just asked the Secretary if the expenses of this Committee in getting up this book had been paid. I don't mean the little traveling expenses of the members of the Committee in coming here. I know they have been paid. If they had not been paid it would not have hurt anybody very much.

The last time I saw Dr. Cowden I said to him, "Cowden, what is the financial status of the Society? This thing is to be published. Dr. Hamer's salary is to be paid and there are a great many expenses in connection with this thing that have to be paid. What is it going to cost?"

He said, "We don't know just yet."

Cowden and Savage were left to make the contracts because they were the two men in Nashville. I said, "If you don't know, what do you expect us to know about it. As far as I am concerned, if they have the money it does not make any difference to me if they give it away. I want to know what it is going to cost, and I want to know how much money they have to take care of it. We had better wait until the meeting of the State Society before we make any suggestions. We can then find out its actual cost. When we get the reports of the Treasurer, Board of Trustees, and things of that sort, we will know where we are at. I don't want to do anything that will cripple our position. I fought the increase in dues when they got it up to $4. I think one of the most important things is to get to the place where your dues should not be put up."

"We have plenty of money," he said.

"You don't know that any more than I do. These men in charge of the money end of it will make their reports at the meeting. There will be plenty of time during the meeting to dispose of this."

As I say, I didn't know and he didn't know and I don't think any of the Committee knew. My understanding was that Dr. Hamer was employed to do this work at the most moderate price he could afford to do it. I understand that the expenses Dr. Hamer has paid out of his own pocket in hunting up and getting this data amounts to quite a considerable sum, to say nothing of the amount due him for his services. I know what the contract was as far as pay was concerned for Mr. Rice and Mr. Moore. I don't know what the contract was with Dr. Hamer. Dr. Hamer took the work and finished it in the time we specified. I think he should be liberally compensated for the work. I think all of his expenses in getting up the work should be paid. I don't believe there is another man in the state who could have done the work in the limited time that we gave Dr. Hamer.

As I said, I bought my copy. When I went to buy it I expected to pay $6, but instead of that I paid $3. A few months ago I bought a book not nearly as large as that, no more interesting, no more valuable, "The Tragic Era", and I paid $5. If we get it at $3 I know the Society is going to have to pay a balance. I am opposed to impairing our financial condition.

(The question was called for).

THE SPEAKER PRO TEM: The question has been called for. The motion is on the question of each member paying for his own book, if he receives one. All in favor of the question let it be known by saying "aye"; opposed "no". The "ayes" have it.

Gentlemen, there is probably some new business to be brought up. Have we any unfinished business, Mr. Secretary?

THE SECRETARY: No.

THE SPEAKER PRO TEM: Has anybody any new business to present?

DR. R. L. JONES (Nashville): At the request of about a dozen constituents, I have a resolution that I believe will be a bombshell. It is introduced by request.

(The Secretary read the resolution pertaining to the Eye, Ear, Nose and Throat Section.)

Whereas the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association consists of members in good standing of this Association, and the organization of this section has been authorized by the House of Delegates of the State Association;

Therefore, the said Eye, Ear, Nose and Throat Section being a part of this Association, and its meetings being a part of the Annual Meetings of the State Association;

Be It Resolved, That all the expenses of the said sessions of the Eye, Ear, Nose and Throat Section at the Annual Conventions shall, in the future, be borne by the State Association.

DR. E. R. ZEMP: This thing is just twelve hours too late. The time for considering all new business terminated yesterday. Am I not correct?

THE SPEAKER PRO TEM: Yes.

DR. E. R. ZEMP: We can't consider it. We have no authority.

THE SPEAKER PRO TEM: I think Dr. Zemp's point is correct. Still, that is not an amendment to the By-laws and might be considered as a resolution. But your By-laws provide for the sections paying their own expenses. Am I right?

THE SECRETARY: The By-laws do not touch the matter of expenses. An action of the Board of Trustees two years ago did touch on it, and the House of Delegates last year, after discussion, ratified the action of the Board of Trustees with reference to it. It was debated in the House last year at Jackson and concluded.

THE SPEAKER PRO TEM: Gentlemen, the resolution is before you. What shall you do with it?

DR. R. B. WOOD: I move it be tabled.

DR. U. B. BOWDEN: I second the motion.

THE SPEAKER PRO TEM: It has been regularly moved and seconded that this resolution be tabled. All in favor of tabling the resolution let it be known by saying "aye"; opposed "no". The "ayes" have it. The resolution goes to the table.

Gentlemen, there is one thing I do not think it would be proper for this House to adjourn without taking some action on, and that is with regard to the illness and the unfortunate thing of our Speaker not being present with us, due to illness. I think it would be very appropriate if we would pass some kind of a resolution to that effect.

DR. W. K. SHEDDAN: Mr. Speaker, I move you, sir, that the Secretary be instructed to convey to Dr. Cowden, the Speaker of this House, our sincere sympathy for him in his affliction and our wishes for his speedy recovery and our regret at his not being present.

THE SECRETARY: I should like to amend that motion by saying that the House appoint a committee to call on him and make a personal communication of it.

DR. W. K. SHEDDAN: I think the call of a committee would do him harm. However, I accept the amendment.

DR. J. P. TAYLOR: I second the motion.

THE SPEAKER PRO TEM: You have heard the motion as amended. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". There will be a committee appointed to represent the House. I shall appoint on that committee, Dr. Richards, the Secretary, Dr. L. L. Sheddan from Middle Tennessee, and Dr. Baird from West Tennessee.

DR. E. H. BAIRD: I beg to be excused. I am leaving town about noon. I think it would be more fitting to have someone from Nashville.

THE SECRETARY: Dr. Burns, will you serve on the committee from West Tennessee?

DR. BURNS: Yes.

THE SPEAKER PRO TEM: Gentlemen, is there anything else to come before the House?

DR. E. H. BAIRD: Mr. Chairman, I have been informed that the $2 registration fee for members was put over. I am opposed to that, and I move that that action be rescinded.

DR. W. K. SHEDDAN: Did you vote on that proposition?

DR. BAIRD: No.

DR. W. K. SHEDDAN: You can't move for reconsideration.

THE SPEAKER PRO TEM: It will require a two-thirds vote for rescinding.

DR. DeLOACH: I second the motion.

DR. BAIRD: I was not here yesterday when that motion passed. I have no interest, understand. It does not mean a great deal to me. I expect I can probably raise the $2, as far as that is concerned, but I believe that in your State Society as well as in your Local Society, if you run up the expenses of registration and pile up your dues, you are going to stop a number of men from registering. I think that is a bad idea. I think the more men you have in the State Association, the more you have present, the better Association you will have. For that reason I am opposed to it.

DR. W. K. SHEDDAN: I move to table the motion of Dr. Baird.

DR. J. W. REED: I second the motion.

THE SPEAKER PRO TEM: A motion to table is not debatable. All in favor of tabling Dr. Baird's motion let it be known by saying "aye"; opposed "no". There seems to be a division, and I will ask all in favor of tabling Dr. Baird's motion to let it be known by rising. (Eight.) All opposed to tabling Dr. Baird's motion let it be known by rising. The motion seems to be lost by a good majority.

It takes a two-thirds vote to rescind the action taken by the House yesterday. All in favor of rescinding the action of the House in assessing a $2 registration fee for members in attendance at meetings, let it be known by rising. (Thirty-four). All opposed to rescinding the action of the House will let it be known by rising. (Nine.)

Gentlemen, by your vote you have rescinded the action of the House yesterday in assessing a $2 charge for registration.

DR. J. W. REED: I move that we rise and extend thanks to the Secretary for the kindness he has shown us while we have been in town.

DR. A. F. RICHARDS: I should like to second that motion provided it is extended to the Nashville Academy of Medicine as well as to the Secretary.

THE SPEAKER PRO TEM: Do you accept that as an amendment?

DR. REED: Yes.

DR. E. R. ZEMP: I should like to amend it still further that we extend him a vote of thanks and appreciation for his wonderful work on the Journal and for the general welfare of the Association for the last year.

DR. REED: I accept that amendment.

DR. RICHARDS: I accept the amendment.

DR. J. P. TAYLOR: I second Dr. Zemp's amendment.

THE SPEAKER: It has been regularly moved and seconded, gentlemen, that we extend to the Nashville Academy of Medicine a vote of thanks for their hospitality during our stay here and to the Secretary for his untiring efforts for furthering the interests of this Society during the past year. Are you ready for the question? All in favor of the motion let it be known by saying "aye"; opposed "no". The "ayes" have it.

Is there anything else to come before the House?

DR. J. P. TAYLOR: I move we adjourn.

THE SPEAKER PRO TEM: I wish to thank this body for the honor in requesting me to preside at this House's session, having filled this position for several years before. I wish to thank you one and all for the honor conferred upon me. Now I will turn the House over to Dr. Zemp.

THE SPEAKER-ELECT: I hope I make as an efficient and amiable Speaker as my predecessor.

THE SECRETARY: Mr. Speaker, I move the appointment of a committee to notify the general body of the action of this House.

THE SPEAKER PRO TEM: Mr. Secretary, will you not include in your motion that they capture the President and escort and introduce him to the general body? I shall appoint on that Committee Dr. Shoulders, Dr. DeLoach and Dr. W. L. Williamson.

(The meeting adjourned at ten-thirty o'clock.)

ANNUAL REPORT OF DISTRICT COUNCILORS, TENNESSEE STATE MEDICAL ASSOCIATION

COUNTY AND DISTRICT	*Members in County*	*Physicians in County*	*Eligible Non-Members*	*New Members*	*Died Since April 1st*	*Dropped N. P. D.*	*Society Meetings*	*Average Attendance*	*Papers Read*	*Medical Defense Compulsory?*
FIRST DISTRICT—										
Hancock, Claiborne and Union	11	15	8	1	1	8	11	8	10	No
Carter	11	19	8	2	1	4	12	9	15	No
Cocke	11	17	3	1	1	0	10	7	4	No
Greene	12	17	5	1	0	0	12	8	12	Yes
Hawkins	9	20	11	1	1	2	0	0	0	No
Sevier	8	12	4	0	0	0	4	5	0	No
Sullivan-Johnson	17	55	38	0	1	0	12	12	12	No
*Unicoi										
Washington	39	54	5	5	0	3	12	20	10	No
SECOND DISTRICT—										
Anderson	12	14	2	0	0	0	11	8	13	No
Blount	23	31	5	2	0	2	44	12½	32	Yes
Campbell	17	26	9	1	0	2	8	12	4	No
Hamblen	10	12	1	0	0	0	12	80%	2	No
Jefferson	9	13	4	0	2	0	0	0	0	No
Loudon	7	9	2	2	2	1	15	5	15	Yes
Knox	148	160	6	12	2	1	50	38	53	Yes
Roane	15	23	8	1	0	0	12	0	12	No
Scott	9	9	0	0	1	0	0	6	6	Yes
THIRD DISTRICT—										
Hamilton	126	171†	12	5	2	0	44	38	48	No
McMinn	14	22	8	0	0	0	12	8	10	Yes
Monroe	14	16	1	1	0	0	6	10	12	Yes
Polk	7	12	5	0	0	0	1	4	0	No
Warren	12	14	16	0	0	0	1	0	0	No
White	9	10	0	1	0	0	10	5	8	No
FIFTH DISTRICT—										
Bedford	13	16	2	0	1	0	12	10	12	No
*Cannon										
Coffee	7	11	3	0	0	0	8	90%	8	No
Lincoln	16	--	3	0	0	0	2	0	0	?
**Marshall										
*Moore										
Rutherford	22	27	5	2	1	3	2	11	0	No
SEVENTH DISTRICT—										
Dickson	7	16	9	0	0	3	1	7	0	No
*†Five County	27	37	10	4	2	4	11	20	44	No
Giles	19	26	7	2	0	3	12	53%	9	No
Hickman	4	5	1	0	0	1	2	4	0	Yes
Maury	29	42†§	3	2	1	1	12	12	11	No
Williamson	8	15	6	1	0	1	7	6	5	No
EIGHTH DISTRICT—										
Hardeman	--	4	--	7	1	2	2	6	2	
Madison	40	48	6	3	2	3	10	15	7	No
McNairy	11	16	6	0	0	2	0	0	0	No
§Tri-County	17	19	2	0	0	0	4	13	5	No
NINTH DISTRICT—										
Obion	14	42‡	11	1	1	11	8	5	0	No
Dyer, Lake and Crockett	33	3	--	0	1	2	11	30	96	No
TENTH DISTRICT—										
Shelby	300	380	45	21	2	0	19	60	76	No

No reports from Fourth and Sixth Districts.

Lincoln County has three honorary members; Maury County five honorary members.

*Has no Society.

**No report.

†In Hamilton County there are 156 white and 15 colored doctors.

*†Lawrence, Lewis, Perry, Hardin and Wayne Counties.

†§In Maury County there are 39 white physicians and 3 colored physicians.

§Henderson, Decatur and Chester Counties.

‡In Obion County there are 34 white and 8 colored doctors.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1930

EDITORIAL

CHRISTMAS GREETINGS

This issue of the Journal will reach members considerably in advance of Christmas Day, but this office will take occasion now to wish every member a Merry Christmas and a Happy New Year, and to thank them for their co-operation in the work of organized medicine during the year that is ending.

AMERICAN MEDICINE AND THE AMERICAN LEGION

American medicine has opposed certain federal legislation sponsored by the American Legion in the interest of certain classes of world war veterans.

American medicine has opposed legislation which provided for medical, surgical and hospital benefits to veterans with disabilities which were not incurred in line of duty (non-service connected disabilities).

Notwithstanding the opposition of medicine the policy of extending benefits to veterans with non-service connected disabilities has been inaugurated. Not only has it been inaugurated, but it seems now that such benefits may be a fixed policy of the federal government.

As a doctor and a veteran I entertained the hope of finding common ground on which American medicine and the American Legion could agree with respect to these policies. With this thought in mind, I proposed the following resolution for adoption by the House of Delegates of the American Medical Association in June:

(Page 40, Proceedings of the House of the House of Delegates of the American Medical Association held at Detroit, Michigan, June 23-27, 1930.)

WHEREAS, The government of the United States has determined on a policy of rendering aid to disabled veterans with non-service connected disabilities, and

WHEREAS, The policy at present involves a large outlay of money on the part of the government in the construction and administration of government hospitals, and

WHEREAS, Such benefits to veterans are most available to men who reside near a government hospital and least available to men who reside at a distance from a government hospital, the benefits thereby rendered unequally to veterans; therefore, be it

RESOLVED, That the American Medical Association urge upon veterans' organizations and the Congress of the United States the wisdom and fairness of administering benefits to disabled veterans with non-service connected disabilities *through the agency of a disability insurance policy* which would be issued to each veteran and which would provide for the payment of *a sum of money per week* in the event of total disability during the period of such total disability, on the satisfactory proof of such total disability being furnished the government. That the Veterans' Bureau in each state be the final arbiter in determining questions of disability when disputes arise.

Such a policy would enable the government to render the necessary aid to worthy veterans. It would preserve to the veteran his liberty of choosing the persons and institutions to render such aid. It would preserve the often declared policy of the government not to enter private business in competition with its citizens.

Since that time I have discussed the question with some officials of the American Legion. Some of these are favorably impressed with the idea. Some expressed such resentment toward American medicine that they do not wish to consider it at all. Some members of the medical profession who are also veterans have looked upon it with much favor. I, therefore, feel warranted in bringing the matter to the attention of the profession in Tennessee in this manner.

Such a policy would be advantageous in my opinion to veterans, to the government and to the profession of medicine.

The advantages to the government would be that benefits under a disability policy could be provided more economically than a program of hospital construction and maintenance.

The advantages to the veterans would be:

(a) The benefits would be equally available to all veterans regardless of their place of residence.

(b) The benefits would be available regardless of whether the veteran is ill in a hospital or in his home.

(c) The veteran would have the liberty of choosing his own physician.

(d) The veteran would have the liberty of choosing the class and price of hospital service.

The advantages to the profession would be that practitioners of medicine would not be engaged in competition with the government and private hospitals would not be in competition with government hospitals.

In general it may be stated that organizations already in existence with some enlargement could administer a disability insurance law.

Certainly medicine will get nowhere by its policy of outright opposition to policies that are already fixed by the federal government toward veterans.

We cannot stop the stream, but we may change the direction of its current so as not to play havoc with American medicine.

An actuary has supplied figures which show definitely that a disability insurance policy with a fairly liberal weekly benefit clause can be issued to each veteran at less expense than the cost of constructing and maintaining hospitals for the accommodation of veterans with non-service connected disabilities.

Minutes of the House of Delegates

During the last meeting of the State Society the suggestion was made in the House of Delegates that the minutes of the previous meeting be printed in the issue of the Journal immediately preceding the date of the next meeting. It is impracticable to do this for the reason that the minutes of the session for the year 1930 would appear in the Journal volume for the year 1931. The minutes are, therefore, being run in the last issue of the Journal for the calendar year 1930.

It will be well for members who are elected delegates to read and study the minutes of the previous meeting.

Invitation

A cordial invitation is extended to the members of the medical profession of Tennessee and Kentucky by the President, the Board of Regents, and the Tennessee State Executive Committee of the American College of Surgeons, to attend the Tennessee and Kentucky Sectional Meeting of the College at Nashville, on Friday and Saturday, January 16 and 17, next. Distinguished leaders in medical science and hospital administration will be present, including Dr. William R. Cubbins, of Chicago, Professor of Surgery, Post-Graduate Medical School, and Associate Professor of Surgery, Northwestern University School of Medicine; Dr. Alfred W. Adson, of Rochester, Associate Professor of Surgery, Mayo Foundation; Dr. George J. Heuer, of Cincinnati, Professor of Surgery, University of Cincinnati College of Medicine; Dr. Bowman C. Crowell, of Chicago, Director of Clinical Research of the American College of Surgeons; Dr. Malcolm T. MacEachern, of Chicago, Director of Hospital Activities of the American College of Surgeons.

This meeting will not only be of scientific value to every doctor in the district, but in addition will afford them an opportunity of becoming more familiar with the Hospital Standardization movement which has done so much for the practice of medicine and which should be furthered to the fullest extent. Mark your calendar now and be present.

For any further information, see program, or address the local Fellows of the College of Surgeons at Nashville.

AMERICAN COLLEGE OF SURGEONS
Sectional Meeting for Tennessee and Kentucky
NASHVILLE, TENNESSEE
January 16 and 17
Headquarters—Noel Hotel

FRIDAY, JANUARY 16

Registration at Headquarters, Noel Hotel.

Clinics

8:00-11:00 a. m.

Medical and Surgical Clinics at Local Hospitals.

Hospital Conference

9:30-11:30 a. m.—Ballroom, Noel Hotel

Round table conference and discussion on Hospital Administration and Economics conducted by Malcolm T. MacEachern, M.D., Director of Hospital Activities of the American College of Surgeons.

Clinical Addresses

11:30 a. m.-12:30 p. m.—Ballroom, Noel Hotel

"Fractures of the Humerus"

William R. Cubbins, M.D., Chicago

(Subject to be announced)

George J. Heuer, M.D., Cincinnati

Hospital Conference

2:00-4:30 p. m.—Ballroom, Noel Hotel

Addresses, round table conference, and general discussion of Practical Problems Affecting the Administrative and Professional Efficiency of the Hospital.

Annual Meeting of Fellows

4:30-5:00 p. m.—Ballroom, Notel Hotel

Meeting of the Fellows of the College and Election of Officers.

Dinner

6:30 p. m.—Ballroom, Noel Hotel

Dinner and Demonstration of Medical Motion Pictures.

SATURDAY, JANUARY 17

Clinics

8:00-11:00 a. m.

Medical and Surgical Clinics at Local Hospitals.

Hospital Conference

9:30-12:00 a. m.—St. Thomas Hospital

Practical demonstrations and round table conference—Hospital Planning, Construction, Equipment, Organization, and Procedures.

Clinical Addresses

11:30 a. m.-12:30 p. m.—Ballroom, Noel Hotel

(Subject to be announced)

Alfred W. Adson, M.D., Rochester

"Bone Sarcoma"

Bowman C. Crowell, M.D., Chicago

Scientific Meeting

2:00-5:00 p. m.—Ballroom, Noel Hotel

Addresses on surgical subjects will be given by visiting speakers and local Fellows.

Hospital Conference

2:00-4:30 p. m.—Vanderbilt Hospital

Practical demonstrations and round table conference—Hospital Planning, Construction, Equipment, and Procedures.

Community Health Meeting

8:00-10:00 p. m.

Tennessee War Memorial Auditorium

(See final program for details)

DEATHS

Dr. I. N. Ford, New Tazewell; Kentucky School of Medicine, Louisville, 1898; member of the Tennessee State Medical Association; aged 60; died, November 17, following a brief illness of heart trouble.

Dr. N. M. McCoin, Gainesboro; member of the Tennessee State Medical Association; aged 72; died, November 5, after an illness of several weeks.

NEWS NOTES AND COMMENTS

Dr. Sam T. Parker, of Jackson, is taking special post-graduate work on the eye and ear at Harvard Medical College, Boston.

Dr. Frank H. Smith, of Abington, read a paper on the "Code of Ethics of the Medical Profession" before the Kiwanis Club of Kingsport.

"If you have any suggestions to make for the betterment of your medical society, just get in communication with your officers, and they will give your suggestions due consideration."

At a recent meeting the members of the Blount County Society voted unanimously to forego the pleasure of sending Christmas cards to their friends, and to subscribe an amount equal to what they usually spent for Christmas cards towards the expense of operating the Mountain View Tuberculosis Sanitarium. This is a local institution, and admits only the pre-tubercular children of Blount County, and is doing a splendid work.

MEDICAL SOCIETIES

Bedford County—At the November meeting a paper was read by Dr. M. L. Connell on "The Artificial Feeding of Infants Under Four Months of Age". The discussion was opened by Dr. W. H. Avery.

The December meeting will be held on

the 18th, at which time there will be a president's address and election of officers.

Benton, Carroll, Henry, Weakley Counties—On November 11, this society met as usual at Hotel Lynn, McKenzie. Dr. Jones, of the U. S. P. H. Service, read a paper on "Syphilis". Dr. Morris of the State Department of Public Health read a paper on "Public Health".

Officers for 1931 were elected as follows: President, Dr. E. M. Alexander, McKenzie, Carroll County; Vice-President, Dr. J. E. Jeter, Gleason, Weakley County; Vice-President, Dr. S. W. Huffman, Carroll County; Vice-President, Dr. Chas. Hendley, Paris, Henry County; Vice-President, Dr. A. T. Perry, Camden, Benton County; Secretary-Treasurer, Dr. Geo. D. Boone, Jr., Paris, Henry County.

Blount County—On October 23rd, Dr. Eben Alexander, of Knoxville, was an invited guest of the society, and read a paper on "The Abuse of Caesarean Section".

Davidson County—November 18: "The Mechanism, Diagnosis, and Treatment of Fractures and Dislocations of Bones Forming the Wrist Joint", by Dr. E. A. Syers. Discussed by Dr. George K. Carpenter.

November 25th: "Leukoplakia Bacallis, With a Study of Eighty Cases", by Drs. Howard King and C. M. Hamilton. Discussion opened by Dr. E. E. Brown.

December 2nd: "Pathological and Surgical Consideration of the Gall Bladder", by Dr. W. D. Haggard. Discussed by Dr. Robert Caldwell.

December 9th: "Visual Field Changes in the Affections of the Optic Pathway", by Dr. Carroll Smith. Discussion opened by Dr. R. J. Warner.

Gibson County—On December 29th, Dr. Carroll Turner, of Memphis, is on the program for a paper, "The Hysterical Patient". Dr. B. S. Penn, of Humboldt, will discuss "Common Eye Disorders".

Hamilton County—The program for November 20 was a paper by Dr. Jas. L. McLester, of Birmingham, on "Dietary Management of the Nephritic".

No meeting was held Thanksgiving Day. On December 4, the program called for election of officers and on December 11th there was a memorial meeting.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—The November meeting was held in Savannah. The program was as follows:

Dr. Willis Campbell, Memphis, "Affections of the Lower Spine". Discussion opened by Dr. Risen DeFord, Savannah.

Dr. T. A. McAmis, Lawrenceburg, "Personal Experience With Scarlet Fever". Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

Dr. George R. Livermore, Memphis, "Pus and Blood in the Urine". Discussion opened by Dr. H. C. Boyd, Waynesboro.

Dr. J. H. Tilley, Lawrenceburg, "Treatment of Puerperal Septicemia". Discussion opened by Dr. H. C. Boyd, Waynesboro.

Dr. O. A. Kirk, of Linden, was elected President for the ensuing year, and Dr. C. C. Stockard, Lawrenceburg, Secretary and Treasurer.

Knox County—On November 11, Dr. E. S. Clayton read a paper on "Intravenous Medication". Dr. C. J. Carmichael opened the discussion.

November 18th: Dr. James F. Brewer on "Hemoptysis". Discussion opened by Dr. J. B. Naive.

November 25th: Dr. C. H. Long on "Aleukemic Leukemia". Discussion opened by Dr. E. R. Zemp.

Drs. A. B. Stone and Theo Foster were the speakers on December 2nd and 9th, respectively.

Roane County—Roane County held its regular monthly meeting November 18th. Dr. J. J. Waller presented a case of "Hodgkins Disease", and Dr. F. A. Neergaard read a paper on "The Septic Mouth".

Robertson County—The November meeting was held in Springfield. Several interesting case reports were given by those present.

Dr. M. C. Banks, Greenbrier, spoke on "Leukemia".

The proposed establishment of a Charity Hospital by the county court was discussed and approved.

Officers for 1931 were elected as follows: President, Dr. S. J. Fentress, Goodlettsville; Vice-President, Dr. J. S. Hawkins, Springfield; Secretary, Dr. W. F. Fyke, Springfield.

OTHER MEDICAL SOCIETIES

Southern Medical Association — More than 2,000 doctors from everywhere attended the Louisville session of the Southern Medical Association.

Dr. Felix J. Underwood, of Jackson, Mississippi, was elected president. Dr. W. Hamilton Long, Louisville, was chosen first vice-president, and Dr. G. W. Harrison, Birmingham, was named second vice-president.

The 1931 meeting will be held in New Orleans.

Middle Tennessee Medical Society—The Lawrenceburg meeting was successful both in the attendance and quality of papers read.

Springfield was selected as the next meeting place.

Officers elected are as follows: Dr. J. H. Tilley, Lawrenceburg, president; Dr. C. S. McMurray, Nashville, vice-president, and Dr. Theodore Morford, Nashville, secretary.

PROGRAM FOR MEETING OF THE VANDERBILT UNIVERSITY MEDICAL SOCIETY

November 7, 1930, 8 P. M.

Amphitheatre of the Medical School

1. *Presentation of Cases:*

(a) A Case of Neurofibromatosis—Dr. A. H. Bell.

L. H., colored male dwarf, 50 to 60 years of age, entered Medical Out-Patient Department with history of numerous painless tumor masses scattered diffusely over body, particularly on the trunk. These masses vary in size from buckshot to small walnut. Some are sessile and others are pedunculated and have no characteristic nerve distribution. Onset seven to eight years of age, with complete growth at 20. Case discussed by Dr. Youmans.

(b) A Patient with Unexplained Fever—Dr. Edgar Jones.

W. T., white, male, age 41, admitted with high fever and strange skin lesion of the hands. Fever subsided and hands healed. Fever recurred and an unusual shadow found on x-ray of chest. Fever has remained high for eight weeks. All the blood agglutinations and cultures have been negative. Case discussed by Drs. Hillstrom and Burwell.

2. *Further Studies in Congestive Heart Failure. Respiratory Measurements as a Test of Cardiac Function*—Dr. T. R. Harrison.

A method of expressing dyspnea in quantitative terms by means of respiratory measurements was presented. It was shown that the patients with cardiac disease usually had high values, whereas, patients without cardiac disease usually had normal values.

It was demonstrated that digitalis usually diminished dyspnea even in patients with relatively early disease.

By means of the studies of the cardiac rate and thickness of the muscle fiber in various animals it was shown that the optimum cardiac rate is slow in animals with thick cardiac fibers and vice versa. The importance of the thick muscle fiber in producing cardiac fatigue in patients with cardiac disease was emphasized. Paper discussed by Drs. Burwell, Cullen, and Youmans.

3. *The Non-specificity of Vitamin E for Normal Testicular Function*—Dr. K. E. Mason.

The testicular degeneration resulting from deficiency of vitamins A and D, and from inanition, cannot be prevented by supplying large amounts of the anti-sterility vitamin, vitamin E. The pathological picture following vitamin A deficiency closely resembles that resulting from vitamin E deficiency, whereas regeneration following vitamin therapy in the two cases is very different. Paper discussed by Dr. Cullen.

BOOK REVIEWS

DISEASES OF THE SKIN. A Text-book for Practitioners and Students. By George Clinton Andrews, A.B., M.D., Associate Professor of Dermatology, College of Physicians and Surgeons, Columbia University; Consulting Dermatologist and Syphilologist to Tarrytown Hospital; to St. John's Hospital, Yonkers; to Grassland's Hospital, and to the Broad Street Hospital, New York City. 1091 pages with 988 illustrations. Philadelphia and London: W. B. Saunders Co., Publishers, 1930. Cloth $12.00 net.

The whole subject of dermatology is well classified into groups of diseases. At the end of each chapter there appears an extensive bibliography of the literature.

The illustrations throughout the book are good though none of them are colored.

Emphasis is placed on diagnosis.

The chapters on Roentgen ray, supersoft x-rays or Grenz rays, the ultra violet light, radium and surgical diathermy are more complete than is the case with the usual text on dermatology.

The subject of syphilis is treated in 127 pages.

All in all, this book I regard as a valuable text and a distinct contribution to the subject of dermatology. —E. E. BROWN, M.D.

Chronic Arthritis and Rheumatoid Affections, with Recovery Record, by Barnard Langdon Wyatt, M.D., F.A.C.P. Published by Messrs. William Wood and Company, New York. 166 pages. Price $2.50.

Treatment of Epilepsy, by Fritz B. Talbot, M.D., Clinical Professor of Pediatrics, Harvard University Medical School; Chief of Children's Medical Department, Massachusetts General Hospital. Published by the MacMillan Company, New York, 1930. Price $4.00.

A Manual of Normal Physical Signs, by Wyndham B. Blanton, B.A., M.A., M.D.; Second Edition. Published by the C. V. Mosby Company, St. Louis, 1930. Price $3.00.

Physical Diagnosis, by Warren P. Elmer, B.S., M.D., and W. D. Rose, M.D. Published by the C. V. Mosby Company, St. Louis, 1930. Sixth Edition. Price $10.00.

Medical Jurisprudence, by Elmer D. Brothers, B.S., LL.B. Third Edition. Published by the C. V. Mosby Company, St. Louis, 1930. Price $3.50.

Operative Gynecology, by Harry Sturgeon Crossen, M.D., F.A.C.S., and Robert James Crossen, M.D. Fourth Edition. Published by the C. V. Mosby Company, St. Louis, 1930. 1246 illustrations. Price $15.00.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.

Medical Arts Bldg., Nashville

Cesarean Section Under Local Anesthesia. Walter Hume, M.D., Louisville, Ky. Current Researches in Anesthesia and Analgesia. July-August, 1930.

The author states that the literature on this subject is not voluminous and his experience has not been very much. Whatever the advantages of local anesthesia may be they are as easily available here as in any procedure involving incision through the abdominal wall. In the author's practice this method, in certain serious Cesarean section cases, is the method of choice, and it is believed that its more general adoption would tend to lower the comparative high mortality in such cases.

No complicated local anesthetic technique is required. Anesthesia of the abdominal wall alone is necessary. The incision is made in the midline of the uterus without fear as there is little or no sensation of pain in the uterus. Sterilization of the patient requires no additional anesthetic.

The chief contraindication are nervous and unruly patients who refuse to cooperate requiring large doses of narcotics, which are harmful to the child. General anesthesia must be used on this class of patients. Indications for this method are the toxic eclamptic cases, also the bad cardiacs, nephritics and pulmonary tuberculosis cases who must undergo Cesarean section.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.

Medical Building, Knoxville

Hydatidiform Mole as Cause of Positive Reaction in Aschheim-Zondek Pregnancy Test. J. I. Fanz and E. S. Gault, Philadelphia. Journal of Laboratory and Clinical Medicine, October, 1930.

The authors obtained a definite positive Aschheim-Zondek test with a urine of a woman three days after she had expelled a Hydatidiform Mole. There was in this case no actual fetal formation with development of chorion and decidua only, the authors attribute the pituitary hyperfunction to the internal secretion of one or both of these cell proliferates. On examining the curve of pituitary secretion during amenorrhea of the mother they found the anterior pituitary hormone rising abruptly in amount during the first month, remaining more or less fixed during the next five lunar months, to follow gradually identical with the development of trophoderm and the chorion and in its decline in its later half is coincident with the disappearance with the Langhan's cells. It seems that the anterior lobe of the hypophysis acts as a cosecretor organ to the growing placental proliferate, causing anterior pituitary activity rather than the cells of the fetus per se. As the patient gave no evidence of breast hypertrophy it would seem that the pituitary hormone has no effect on the breast of the female.

Basal Cell Carcinoma, M. Owen, Fort Worth, Tex., Archives of Pathology, September, 1930.

The author observed 836 cases and from his observations there is no indication that true basal cell carcinoma may occur on the mucous membrane. His review supports the contention that carcinomas having their origin on the mucous membrane lack that low grade of malignancy which the basal cell carcinomas that are located on the skin possess. That it is very difficult to diagnosis as basal cell carcinoma a tumor having its origin from the basal cell layer of the mucous membrane when there are present metastasis and rapid extensive growth consisting chiefly of undifferentiated cells or cells showing squamous characteristics, this tumor has more the appearance of a squamous cell carcinoma.

DERMATOLOGY

By E. E. Brown, M D

Doctors Building, Nashville

Psoriasis—Abstract of Its History and Theories of Etiology. By Herman Goodman, B.S., M.D., New York City. December (1930) Issue of the Urologic and Cutaneous Review.

Dr. Goodman has gone well into the history of this skin disease and gives the various names by which it has been known. He also gives the names of various medical men who have been instrumental in bringing it up to the present day.

Concerning etiology he gives the many theories that have been advanced as to its cause, none of which is he willing to accept.

Some Observations of the Bismuth Treatment of Lupus Erythematosus. By Vittorio Barbaglia, M.D., Director, Dermo-Syphilopathic Clinic, Royal University, Sassari, Italy. December (1930) Issue of the Urologic and Cutaneous Review.

The author is not of the opinion that there is any connection between lupus erythematosus and syphilis. He states that the existence of the two diseases in the same patient is accidental. He reports four cases treated with good results by the injection of bismuth and is of the opinion that bismuth treatment should be taken into consideration in the therapy of lupus erythematosus regardless of any co-existing luetic infection.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Human Bite Infections of the Hand. Michael Livingood Mason and Sumner L. Koch. Surgery, Gynecology and Obstetrics. Vol. LI, November, 1930, No. 5, pp. 591-625.

A most excellent and thorough article, splendidly illustrated on infections of the hand arising from the human bite. The subject is handled from an anatomical, physiological and pathological viewpoint, in such a complete manner that one is inclined after reading it to believe that nothing else could have been added to it. It is a masterpiece.

The manner in which the wound has been received plays a very definite role in the subsequent extension throughout the tissues of the hand. Most frequently the tooth penetrates the skin directly over a metacarpophalangeal joint, usually of the index or middle finger of the right hand. The hand doubled into a fist, with the skin and extensor tendons stretched tightly across the joint, comes into contact with the tooth, which usually penetrates the joint cavity. Due to the flexed position of the fingers the infectious agent is introduced at a point proximal to the attachment of the tendon to the joint capsule. When the finger is extended the original line of entrance is sealed off by the skin and tendon as they glide proximalward. This mechanism is illustrated in the lateral roentgenogram of experimental hand. The infectious agent is at once introduced into three spaces, the joint space, the dorsal subcutaneous space, and the dorsal subaponeurotic or subtendinous space between the tendon and the capsule, where a subtendinous bursa is usually found. At times the tooth injury is received over the proximal phalanx of the finger, in which case infectious organisms may be deposited both superficial to and under the expansion of the extensor tendon on the finger. Less frequently the injury involves the space on the dorsum between the heads of two metacarpals. In such a case the infectious process develops in a loose areolar space in potential communication with any of the other fascial spaces of the hand. With actual bite wounds the infection may enter at any location.

After gaining entrance into the subcutaneous tissues, extension of the infection is determined by the anatomical arrangement of the tissues. The spread, however, is not entirely determined by the continuity of one fascial space with another, but also by the involvement in the process of thin fascial sheets, which when infected lead to extension throughout the spaces of which they form the covering.

Dissections of the hand, with especial attention to the region of the metacarpophalangeal joints, show that at this region there is a convergence of vessels, tendons, and fascia which come from both the volar and dorsal surface. The anatomy of the joint capsule itself is also of importance.

The arrangement of the fascia about the metacarpophalangeal joints is rather complex since most of the layers of the fascia of the hand have some attachment at this location. Under the skin of the dorsum of the hand there is loose, areolar, subcutaneous tissue which separates it from the dorsal subcutaneous fascia. The dorsal subcutaneous fascia covers the back of the hand and has very loose attachment to the underlying dorsal tendons, but it is attached to the skin so that the two structures, skin and fascia, move together. This fascial layer passes distally over the metacarpophalangeal joints on to the fingers, where it becomes continuous with the superficial layer of the digital fascia. At the clefts between the fingers the fascia dips volarward to become continuous with the superficial layer of the palmer fascia, which itself is continuous with the distal portion of the palmer aponeurosis.

There is a second layer of fascia, which is attached laterally to the sides of the phalanges. On the volar surface this fascia splits into two layers on either side to enclose the digital vessels and nerves. Dorsally this layer forms a covering for the extensor tendon, and appears to end in the region of the metacarpophalangeal joints by becoming attached to the superficial dorsal fascia. In the region of the digital clefts the deep digital fascia becomes attached to the dorsal interosseous fascia and to the sheets of fascia which pass between the interosseous muscles.

There are certain differences between the three fascial spaces which are found upon the dorsum of the fingers. The superficial fibrous fascia of the finger is closely connected to the skin by short perpendicular trabeculae which make a fairly dense area in which the spread of infection is limited. The superficial digital and deep digital fascia are also bound to each other, though somewhat less securely, so that spread of infectious material between them is somewhat limited. Between the deep digital fascia and the tendon, however, is very loose areolar tissue which allows freedom of movement of the tendon. Infection in this space spreads much more easily than in the more superficial space and the infectious material is directed by the fascia around the phalanx toward the volar surface, where it comes to lie against the neurovascular tunnel leading into the palm. The extensor tendon over the proximal phalanx receives the attachments of the lumbrical and interosseus muscles. Consequently infection in the space between the deep digital fascia and the tendon may follow one of two possible routes to the palm: one along the lumbrical tendons, and the other in the interosseous spaces of the palm along the interosseous muscles. There is still another deeper space on the dorsum of the fingers between the extensor tendon and the periosteum over the phalanges. Infection in this space is also carried volarward around the phalanx, is in close relation to the lumbrical-interosseus tendons and lies directly over the bone, which frequently becomes involved by direct extension of the infection.

The attachment of the extensor tendon to the proximal phalanx of the finger is deserving of special mention. The tendon is securely attached to the capsule of the joint over the base of the first phalanx, so that its insertion is broken down with some difficulty. By this insertion the space under the dorsal tendon over the region of the joint is divided into two compartments, a distal and a proximal. The distal compartment lies on the proximal phalanx and is separated from the proximal compartment by the dense attachment of the tendon to the joint capsule. From the subtendinous space over the middle phalanx the distal compartment is separated by the attachment of the tendon to the base of the middle phalanx and the proximal interphalangeal joint capsule. The proximal compartment lies proximal to the capsular attachment of the extensor tendon and usually contains a subtendinous bursa which permits easy motion of the tendon over the head of the metacarpal bone. This bursa overlies the dorsal part of the joint capsule which in this location is quite thin.

The attachment of the tendon to the metacarpophalangeal joint is of more than theoretical interest. When the joint is flexed, as the first is closed, the attachment is carried distally so that the knuckles are covered by the extensor tendon and subtendinous bursa proximal to the joint attachment of the tendon. Anything introduced into the subtendinous space while the hand is made into a fist must enter the proximal compartment of the dorsal subtendinous space. This space is of considerable extent and extends proximally over the metacarpus.

The attachments of the capsule of the metacarpophalangeal joints are fairly well known, but their importance in the extension of purulent exudate from the joint into the surrounding structures has not been emphasized. The capsule of the joint is lined by an inner synovial layer of fine and thin texture. Surrounding this layer is a thicker sheet of fibrous tissue which is condensed into various thickened portions so as to strengthen the joint. On the anterior or volar surface of the joint there is a dense, tough fibrous plate almost as hard as cartilage, in which masses of cartilage may at times be found. This plate is further thickened by the addition of fibers from the fibrous sheaths of the flexor tendons. Laterally there are developed in the fibrous capsule on either side thick bands, the collateral ligaments, which run from the nodules on the dorsal surface of the heads of each metacarpal bone, distally and volarward to become attached to the lateral surfaces of the condyles of the base of the first phalanx. A less definite ligament, the volar accessory ligament, runs from the dorsal part of the capsule to the thick volar plate. There are four definite weak spots in the joint capsule which make for greater mobility to the joint. All of them are in relation to the metacarpal attachments of the joint capsule. One lies on the volar surface at the proximal border of the dense volar plate which is securely attached to the proximal phalanx, but attached to the metacarpal bone by only a thin, redundant synovial sheet. When the joint is extended, and when the joint cavity is distended the loose attachment of the capsule becomes apparent as a thin membrane covering over the condyles of the metacarpal bone. There are two other weak spots in the joint capsule between the contiguous borders of the collateral ligaments and the accessory ligaments. A fourth and very important one lies under the extensor tendon directly over the head of the metacarpal and between the points of attachment of the collateral ligaments. It may communicate directly with the thin walled bursa which lies under the extensor tendon just proximal to the head of the metacarpal bone.

The relations of the joint to the surrounding structures are as follows: Dorsally lies the extensor tendon, which at this place is considerably thicker than anywhere else in its course, and is separated from the capsule by the subtendinous bursa. The capsule proper on the dorsum of the joint consists only of a thin synovial membrane, and the fibers of insertion of the extensor tendon. Between the surface of the cartilage covered head of the metacarpal bone and the skin are the following structures: (1) the synovial capsule, (2) the posterior or proximal subtendinous space with the subtendinous bursa, 3) the attachment of the tendon into the joint capsule, (4) the distal compartment of the subaponeurotic or subtendinous space, (5) the extensor tendon, (6) the dorsal subfascial space, (7) the dorsal fascia, (8) the subcutaneous tissues, (9) the skin.

Lateral to the joint the dorsal fascia dips down into the space between the heads of the metacarpal bones and becomes attached to the dorsal interosseous fascia. Between the heads of the bones over the lateral aspect of the joints, the dorsal fascia is quite thin. Under it lies the dorsal aponeurosis which is the expansion of the extensor tendons. At this point it is receiving the attachments of the interosseus muscles, and this tendinous sheet lies directly over the joint and covers over the weak spot in the lateral capsule of the joint between the collateral and volar accessory ligaments. Between the dorsal aponeurosis and the joint capsule there is a thin layer of fibrous tissue. The line of attachment of the extensor tendon to the capsule turn volarward over the lateral side of the joint and reflected proximately so that the thinner portion of the capsule between the two lateral ligaments lies in the distal subtendinous compartment.

The volar portion of the joint capsule is the dense plate mentioned above. To its sides are attached the transverse metacarpal ligaments which hold the adjacent metacarpal heads together. Volar to the transverse metacarpal ligaments run the lumbrical tendons to the fingers. On the volar surfaces of the dense volar plate of the joint capsule lie the flexor tendons in their fibrous and synovial sheaths. The volar plate is continued proximally over the head of the metacarpal bone and becomes continuous with the volar interosseous fascia over the bone and interosseus muscles. It is not firmly attached to the head of the metacarpal bone, though a thin sheet of tissue passes from its under surface to the metacarpal. This sheet is lined on its joint surface by synovial membrane and allows free movement of the joints.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Prevention of Gonorrhea. E. G. Ballenger, C. F. Elder, H. F. McDonald. J. M. A. Ga., Vol. XIX, No. 10.

The authors report only one failure in twenty-three years when treatment is instituted within forty-eight hours after exposure.

This method is also applicable in the treatment of anterior gonococcal urethritis if begun in the first few hours after the appearance of the discharge. The following factors are likely responsible for most failures in this method of treatment: First, long incubation period; second, coitus during incubation period; third, long auto rides during incubation period; fourth, edena of meatus; fifth, repeated coitus or under influence of alcohol at time of exposure.

The technique of treatment is as follows: The patient empties the bladder and reclines, the meatus and glands are cleansed and dried. Not more than 25 cubic centimeters of a 5% argyrol solution (freshly prepared) is injected into the urethra. The urethra is then clamped with two test tube holders. The meatus is dried and the collodion (U. S. P.) is applied to meatus with a camels hair brush. No cotton is used. The clamps remain in position until collodion is dry. The patient is instructed to refrain from any straining or pressure from clothing. Liquids are cut to minimum.

This solution is allowed to remain in urethra for four to five hours. The seal is then broken and urination is allowed. Large quantities of water are then insisted on up to a few hours before next treatment.

Treatments may be repeated daily. If the meatus becomes swollen, the discharge with gonorrhea persists and the urine remains or becomes cloudy, this method of treatment is discontinued.

Failures are often due to infections of glands ot Littre, or when the infection is back of cut-off muscle. Too much solution injected will cause the collodion to seal. More than one treatment daily causes irritation of glands. Unless the patient reports promptly the procedure should not be attempted. A five-day period of observation after all treatment is stopped is necessary before cure can be pronounced.

Familial Neurosyphilis. C. C. Dennie. J. A. M. A. November 22, 1930.

The author states that the idea that persons with active lues do not bear large families must be abandoned.

He found 58% of syphilitic children had involvement of the central nervous system, and that the greater percent had only the meningeal form which he considers just a part of a generalized syphilis. In older children the percent drops to 25, even among the untreated. This indicates that a large percentage of central nervous system involvement disappears without treatment. Those older presenting clinical and serological evidence of syphilis should be more seriously considered.

The type of the disease in parents does not at all determine the type of disease in children. He states that the children of a father with paresis almost invariably escape paresis and may escape the disease entirely, but inherit an inferior mentality and substandard physique.

This escape of the central nervous system from injury is explainable on the theory that the spirochoete causing paresis is an antennuated form, which the somatic system is able to control and is often able to eliminate, but because of the low resistance of the brain and spinal cord, these organisms slowly injure and finally kill these vital cells of the system.

He states that incomplete treatment will often precipitate a neurosyphilis.

In contradistinction to children of those having paresis, children of tabetics almost invariably show central nervous system involvement. The oldest child seems to be as likely to inherit the disease as the youngest. He thinks the organism in this disease is more virulent.

Children of parents suffering with cerebrospinal syphilis are often infected. Usually one child, the eldest, will develop either tabes or paresis, the rest will be free from neurosyphilis.

Treatment of neurosyphilis in children differs little from that in adults. Malaria is used in children over one year of age. He concludes that with the exception of tabes, there is no evidence of neurotropic strain of spirochaetes.

This article is discussed by O'Leary.

INDEX OF VOLUME XXIII

SUBJECTS

Abstracts of Current Literature..........34, 72, 109, 146, 187, 224, 265, 307, 345, 387, 427, 481

Abdominal Surgery, The Evolution of, in the Past Century—John B. Deaver, M.D., Philadelphia, Pa. 155

Anesthesia, Reduction of Fractures Under Local—Wm. Sailer Anderson, M.D., Memphis.. 413

Anesthesia, Spinal, Its Advantages and Disadvantages—J. L. McGehee, M.D., Memphis 41

Book Reviews 223, 264, 306, 344, 385, 426, 481

Breast Cases, A Study of 500, with Surgical End Results—W. O. Floyd, B.S., M.D., F.A.C.S., and W. D. Haggard, M.D., F.A.C.S., Nashville 24

Caesarean Section, The Rationale of Hysterectomy Following, in Cases of Intra-Uterine Infection—Jere Lawrence Crook, A.M., M.D., F.A.C.S., Jackson.......... 325

Cancer of Rectum and Recto-Sigmoid—John B. Haskins, M.D., F.A.C.S., Chattanooga...... 121

Centennial Meeting Papers and Addresses.... 304

Cervix, Erosion of the—John C. Burch, M.D., Nashville 92

Chloroma: Report of a Case—Ralph Monger, M.D., Knoxville 282

Colitis, Spastic—Sam P. Bailey, M.D., Nashville 1

Deaths....66, 102, 182, 262, 303, 341, 382, 423, 476

Dermatosis, Precancerous—A. H. Lancaster, M.D., Knoxville 96

Dextrose, The Intravenous Administration of, in Ringer's Solution—J. Shelton Horsley, M.D., Richmond, Va.......... 169

Diabetes Mellitus, Progress in the Treatment of—C. E. Homan, Jr., M.D., Chattanooga.. 369

Eclamptic Therapy, The Resume of History of, with Review of One Hundred Seventy Cases—J. J. Reinberger, M.D., and P. C. Schreier, M.D., Memphis 252

Economic Status of Medicine Today, The—M. L. Harris, M.D., President of the American Medical Association, Chicago, Illinois...... 273

Eczema, The Nature of—William Allen Pusey, M.D., Chicago, Illinois.......... 393

Editorials 30, 64, 100, 141, 177, 219, 259, 302, 340, 380, 422, 478

Fracture of Bones, The Causes of Non-Union Following—E. Dunbar Newell, M.D., Chattanooga 415

Fractures, Reduction of, Under Local Anesthesia—Wm. Sailer Anderson, M.D., Memphis 413

Gastro-Intestinal Disease, Advances in the Study of—Joseph W. Larimore, A.B., M.D., St. Louis, Missouri 233

Glass Ball Implantation Following Enucleation—E. C. Ellett, M.D., and R. O. Rychener, M.D., Memphis 353

Goiter, The Problem of Colloid—Wm. Calvert Chaney, M.D., M.S. in Medicine, F.A.C.P., The Polyclinic, Memphis 8

Heart in Infectious Disease—W. H. Witt, M.D., Nashville 244

Hypertension, Arterial—James S. McLester, M.D., Birmingham, Ala.......... 163

House of Delegates, Proceedings of.......... 433

Hypotension—J. A. McCulloch, M.D., Maryville 94

Hysterectomy, The Rationale of, Following Caesarean Section in Cases of Intra-Uterine Infection—Jere Lawrence Crook, A.M., M.D., F.A.C.S., Jackson 325

Immortals of Medicine, The Return of the—An Historical Pageant 193

Indigestion, Puzzling Types of—Walter C. Alvarez, M.D., Division of Medicine, The Mayo Clinic, Rochester, Minnesota 330

Kidney, Congenital Polycistic, with a Report of Two Cases—F. K. Garvey, M.D., and Tom Barry, M.D., F.A.C.S., Knoxville.......... 115

Lipiodol in Chronic Maxillary Sinus Disease: Study of One Hundred Cases with Lantern Slides—W. J. Greenfield, M.D., General Polyclinic, Memphis 55

Malignancy of the Oral Cavity—C. M. Hamilton, M.D., Nashville 79

Marriages 68, 382

Medical Education in Tennessee: An Historical Sketch—Otis S. Warr, M.D., F.A.C.P., The Polyclinic, Memphis 288

Medical Ethics and Medical Care—Morris Fishbein, M.D., Chicago, Illinois.......... 362

Medical Progress—L. T. Stem, M.D., Chattanooga 151

Medical Societies 68, 104, 144, 184, 185, 221, 263, 264, 305, 342, 383, 424, 478

Medical Societies, Corrected Roll of (October XXIII, November XXIII) 105

Medical Society, Officers 33

Neuritis, Retrobular, Chronic—W. H. Wilmer, M.D., LL.D., Sc.D., Baltimore, Maryland.. 313

Neuritis in Tennessee, Comment on the Epidemic of Symmetrical Peripheral—Hugh J. Morgan, M.D., Nashville 175

News Notes and Comment 32, 68, 102, 143, 182, 221, 262, 305, 341, 382, 423, 478

Non-Union, The Causes of Following Fracture of Bones—E. Dunbar Newell, M.D., Chattanooga 415

Obstetric Practice, Outstanding Achievements in the Past Hundred Years—John Osborn Polak, M.D., Sc. F.A.C.S., F.R.A.M., (Dublin) Brooklyn, New York.......... 207

Obstetrical Statistics in Nashville and Davidson County—L. J. Caldwell, M.D., Nashville 127

Occlusion, Coronary—H. F. Crawford, M.D., Memphis 136
Pageant, An Historical—The Return of the Immortals of Medicine 193
Pain, The Significance of Abdominal—Leroy E. Coolidge, M.D., Greeneville 133
Pain, The Significance of Neurotic in Middle Aged and Elderly People—Whitman Rowland, M.D., Memphis 82
Pain, Precordial—W. T. De Sautelle, A.B., M.D., F.A.C.P., Knoxville 85
Paralysis, Treatment of General—H. B. Brackin, M.D., Central State Hospital, Nashville 51
Pediatrics, Evolution of—I. A. Abt, M.D., Chicago, Illinois 407
Poliomyelitis—Oliver W. Hill, M.D., and Joe T. Smith, M.D., Knoxville 213
Proceedings of House of Delegates 433
Psychiatrical Patient, The Problem of the Recovered—Earl Dorris, M.D., Western State Hospital, Bolivar 130
Radiation, in Diseases of the Female Pelvis, Indication for the Use of—W. S. Lawrence, M.D., Memphis, Department of Radiology, University of Tennessee 17
Resolutions 66, 142
Ringer's Solution, The Intravenous Administration of Dextrose in—J. Shelton Horsley, M.D., Richmond, Virginia 169
Sinus Disease, Lipiodol in Chronic Maxillary: Study of One Hundred Cases with Lantern Slides—W. J. Greenfield, M.D., General Polyclinic, Memphis 55
Sinus Disease, Para-Nasal, An Etiological Factor in Mastoid Disease—M. M. Cullom, M.D., Nashville 13
Tennessee State Medical Association, One Hundred Years of the—Philip M. Hamer, A.B., M.A., Ph.D., Knoxville 373
Transfusion, Blood—William Joseph Sherman, M.D., Chattanooga 44
Tumors, The Surgery of Uterine and Ovarian—C. Jeff Miller, M.D., F.A.C.S., New Orleans, La. 201
Urology, The Evolution of—C. F. Anderson, M.D., F.A.C.S., Nashville 400

AUTHORS

Abt, I. A., M.D., Chicago, Illinois—"Evolution of Pediatrics" 407
Alvarez, Walter C., M.D., Division of Medicine, The Mayo Clinic, Rochester, Minn.—"Puzzling Types of Indigestion" 330
Anderson, C. F., M.D., F.A.C.S., Nashville—"The Evolution of Urology" 400
Anderson, William Sailer, M.D., Memphis—"Reduction of Fractures Under Local Anesthesia" 413
Bailey, Sam P., M.D., Nashville—"Spastic Colitis" 1
Barry, Tom, M.D., F.A.C.S., Knoxville—"Congenital Polycistic Kidney with a Report of Two Cases" 115
Brackin, H. B., M.D., Central State Hospital, Nashville—"Treatment of General Paralysis" 51
Burch, John C., M.D., Nashville "Erosion of the Cervix" 92
Caldwell, L. J., M.D., Nashville—"Some Obstetrical Statistics in Nashville and Davidson County" 127
Chaney, William Calvert, M.D., M.S. in Medicine, F.A.C.P., The Polyclinic, Memphis "The Problem of Colloid Goiter" 8
Coolidge, Leroy E., M.D., Greeneville—"The Significance of Abdominal Pain" 133
Crawford, H. F., M.D., Memphis—"Coronary Occlusion" 136
Crook, Jere Lawrence, A.M., M.D., F.A.C.S., Jackson—"The Rationale of Hysterectomy Following Caesarean Section in Cases of Intra-Uterine Infection" 325
Cullom, M. M., M.D., Nashville—"Para-Nasal Sinus Disease An Etiological Factor in Mastoid Disease" 13
Deaver, John B., M.D., Philadelphia, Pa.—"The Evolution of Abdominal Surgery in the Past Century" 155
DeSautelle, W. T., A.B., M.D., F.A.C.P., Knoxville—"Precordial Pain" 85
Dorris, Earl, M.D., Western State Hospital, Bolivar—"The Problem of the Recovered Psychiatrical Patient" 130
Ellett, E. C., M.D., Memphis—"Glass Ball Implantation Following Enucleation" 353
Fishbein, Morris, M.D., Chicago Illinois—"Medical Ethics and Medical Care" 362
Floyd, W. O., B.S., M.D., F.A.C.S., Nashville—"A Study of Five Hundred Breast Cases with Surgical End Results" 24
Garvey, F. K., M.D., Knoxville—"Congenital Polycistic Kidney with a Report of Two Cases" 115
Greenfield, W. J., M.D., The Polyclinic, Memphis—"Lipiodol in Chronic Maxillary Sinus Disease—Study of One Hundred Cases with Lantern Slides" 55
Haggard, W. D., M.D., F.A.C.S., Nashville—"A Study of Five Hundred Breast Cases with Surgical End Results" 24
Hamer, Philip M., A.B., M.A., Ph.D., Knoxville—"One Hundred Years of the Tennessee State Medical Association" 373
Hamilton, C. M., M.D., Nashville—"Malignancy of the Oral Cavity" 79
Harris, M. L., M.D., President of the American Medical Association, Chicago, Illinois—"The Economic Status of Medicine Today" 273
Haskins, John B., M.D., F.A.C.S., Chattanooga "Cancer of Rectum and Recto-Sigmoid" 121
Hill, Oliver W., M.D., Knoxville—"Poliomyelitis" 213
Homan, C. E., Jr., M.D., Chattanooga—"Progress in the Treatment of Diabetes Mellitus" 369

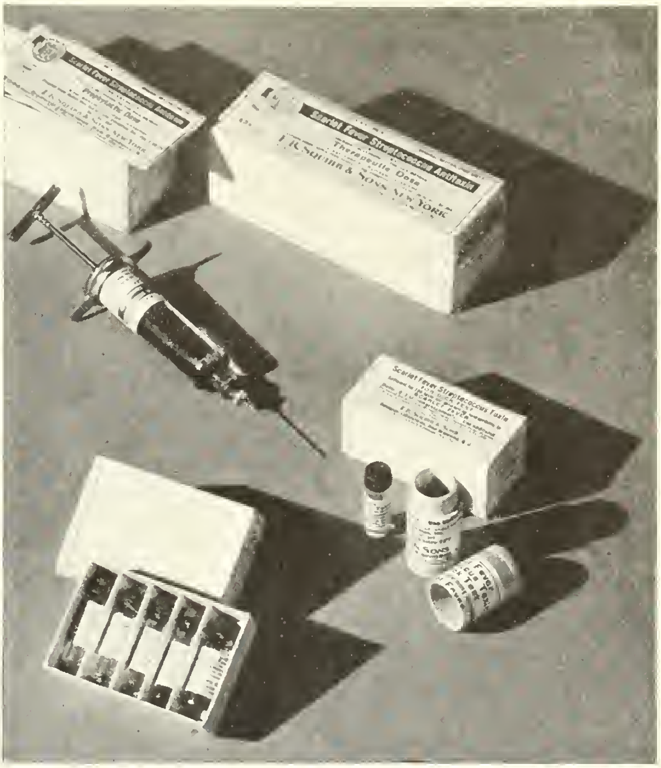
Horsley, J. Shelton, M.D., Richmond, Virginia—"The Intravenous Administration of Dextrose in Ringer's Solution" 169
Lancaster, A. H., M.D., Knoxville—"Precancerous Dermatosis" 96
Larimore, Joseph W., A.B., M.D., St. Louis, Mo.—"Advances in the Study of Gastro-Intestinal Disease" 233
Lawrence, W. S., M.D., Memphis, Department of Radiology, University of Tennessee—"Indications for the Use of Radiation in Diseases of the Female Pelvis" 17
McCulloch, J. A., M.D., Maryville—"Hypotension" 94
McGehee, J. L., M.D., Memphis—"Spinal Anesthesia—Its Advantages and Disadvantages" 41
McLester, James S., M.D., Birmingham, Ala.—"Arterial Hypertension" 163
Miller, C. Jeff, M.D., F.A.C.S., New Orleans, La.—"The Surgery of Uterine and Ovarian Tumors—A Retrospect" 201
Monger, Ralph, M.D., Knoxville—"Chloroma: Report of a Case" 282
Morgan, Hugh J., M.D., Nashville—"Comments on the Epidemic of Symmetrical Peripheral Neuritis in Tennessee" 175
Newell, E. Dunbar, M.D., Chattanooga—"The Causes of Non-Union Following Fracture of Bones" 415
Polak, John Osborn, M.D., F.A.C.S., F.R.A.M., (Dublin) Brooklyn, New York—"Outstanding Achievements in Obstetric Practice in the Past Hundred Years" 207
Pusey, William Allen, M.D., Chicago, Illinois "The Nature of Eczema" 393
Reinberger, J. J., M.D., Memphis—"The Resume of History of Eclamptic Therapy with Review of One Hundred Seventy Cases" 252
Rowland, Whitman, M.D., Memphis—"The Significance of Neurotic Pains in Middle Aged and Elderly People" 82
Rychener, R. O., M.D., Memphis—"Glass Ball Implantation Following Enucleation" 353
Schreier, P. C., M.D., Memphis—"The Resume of History of Eclamptic Therapy with Review of One Hundred Seventy Cases" 252
Sherman, William Joseph, M.D., Chattanooga—"Blood Transfusion" 44
Smith, Joe T., M.D., Knoxville—"Poliomyelitis" 213
Stem, L. T., M.D., Chattanooga—"Medical Progress" 151
Warr, Otis S., M.D., F.A.C.P., The Polyclinic, Memphis—"Medical Education in Tennessee (An Historical Sketch)" 288
Wilmer, W. H., M.D., LL.D., Sc.D., Baltimore, Maryland—"Retrobular Neuritis, Chronic" 313
Witt, W. H., M.D., Nashville—"The Heart in Infectious Disease" 244

APPALACHIAN HALL, ASHEVILLE, N. C.
AN INSTITUTION FOR REST, TREATMENT OF NERVOUS AND MENTAL DISEASES, DRUG ADDICTION AND ALCOHOLISM

Appalachian Hall wishes to announce that it has recently acquired and is now occupying the famous Kenilworth Inn as its new sanatorium. Kenilworth Inn was erected at a cost of more than a million dollars and furnishd at a cost of three hundred thousand. Appalachian Hall is an institution for the treatment of nervous and mental diseases, alcoholism, drug habituation, and a place for rest and convalescence. Every luxury and convenience, private rooms or rooms en suite. Special department for rest cures and convalescents. Physiotherapy, Occupational Therapy, Gymnasium, etc.; Volley Ball, Tennis, Croquet, Horseback Riding, Golfing. Five beautiful golf courses available to patients. Resident physicians on duty at all times; a corps of graduate nurses, especially trained for this work. Training School for nurses. For information and rates, write Drs. Griffin and Griffin.

APPALACHIAN HALL, ASHEVILLE, N. C.

scarlet fever can be prevented


Scarlet Fever Streptococcus Antitoxin
Prophylactic Dose
Scarlet Fever Streptococcus Antitoxin
Therapeutic Dose
E. R. Squibb & Sons New York
Scarlet Fever Streptococcus Toxin

–they proved it at Clay and Berea

THE effectiveness of Scarlet Fever immunization measures in the control of epidemics was recently fully investigated. Two epidemics, in Clay and Berea, Kentucky, in 1929, offered an opportunity for thoroughly testing the effectiveness of such measures. The records of the control of these epidemics were published in the Kentucky Medical Journal in November and December, 1929, and make one of the most valuable and inspiring chapters in the history of preventive medicine.

It has been proved without doubt that with proper measures of immunization no susceptible person need have Scarlet Fever. In both towns several hundred Dick Tests were made, and active measures for immunization taken. In all of these tests, Squibb Scarlet Fever Toxin was used.

Squibb Scarlet Fever Products are manufactured under license from the Scarlet Fever Committee, and samples of every lot are submitted to it for approval. They are as follows:

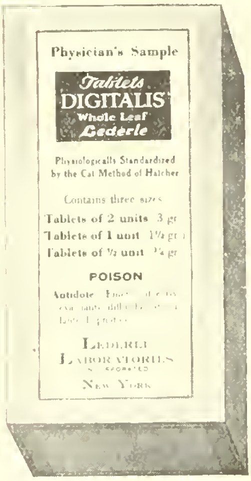
Scarlet Fever Toxin for the Dick Test and for more permanent immunization; Scarlet Fever Antitoxin for temporary prophylaxis and for treatment.

For full information write Professional Service Dept., 745 Fifth Avenue, New York.

E·R·SQUIBB & SONS
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

DIGITALIS
TABLETS *Lederle*

Standardized Whole Leaf



THIS Physician's Sample package containing 3 vials of one-half, one and two cat units respectively, sufficient to digitalize and maintain one patient for a week, will be sent to a Physician on request.

LEDERLE LABORATORIES
INCORPORATED
511 FIFTH AVE., NEW YORK

Nonspi

For Excessive Armpit Perspiration

Keeps the underarms dry and odorless.

Samples mailed on receipt of this coupon.

THE NONSPI COMPANY
2652 WALNUT STREET
KANSAS CITY, MISSOURI

Send free NONSPI samples to:

NONSPI

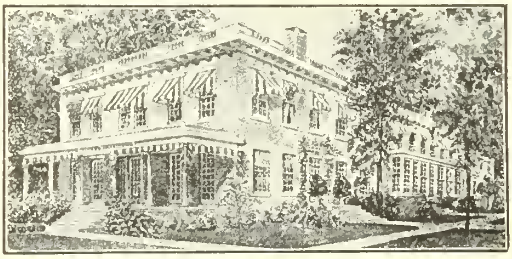
Name ....

Street ....

City ....

A PRIVATE SANATORIUM WITH HOSPITAL FACILITIES

A quarter century of efficient operation



Rates, $25 Per Week and Up

Alcoholic treatment destroys the craving for alcohol, restores the appetite and sleep, and builds the patient up physically and mentally. Whisky withdrawn gradually. Not limited to one pint of whisky in ten days.
Nervous patients are accepted by us for observation and diagnosis as well as treatment.
Drug treatment is one of gradual reduction. It relieves the constipation, restores the appetite and sleep. Withdrawal pains absent. No hyoscine or rapid withdrawal methods used unless the patient desires same.
Mild mental cases have every comfort that their own home affords.

Cherokee Road (Long Dist. Phone East 1488)

DR. STOKES' SANATORIUM

**LOUISVILLE
KENTUCKY**

Situated in the choice highland section of Louisville, just 20 minutes' ride from all railroad stations.

THE WALLACE SANITARIUM

SUCCEEDING WALLACE-SOMERVILLE SANITARIUM, MEMPHIS, TENN.

MEMPHIS, TENN.

WALTER R. WALLACE, M.D.
HUGH W. FRIDDY, M.D.
FOR THE TREATMENT OF

DRUG ADDICTIONS,

ALCOHOLISM, MENTAL AND

NERVOUS DISEASES

LOCATED IN THE EASTERN SUBURBS OF THE CITY. SIXTEEN ACRES OF BEAUTIFUL GROUNDS. ALL EQUIPMENT FOR CARE OF PATIENTS ADMITTED.

41A372